

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

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A Protective Tariff Essential to Highest Prosperity

This country is, at heart, for protection. Upon the question of protection as one of the fundamental issues of the day will be fought the next great political campaign.

The business men of the South, the leaders in cotton manufacturing, in iron and steel making, in lumber, in coal, and iron ore mining, and in many other lines of the mineral industry, the sugar producers, the rice and the peanut growers, the men in the shop and the foundry, the men who have learned how false are the claims of the free traders, are all for protection.

If Southern politicians ignore these facts and keep on playing with their worn-out theories of free trade, they will have no one but themselves to blame for their inevitable overwhelming defeat.

The many people of the South who are protectionists at heart owe it to themselves and to the welfare of their country to meet the issue squarely and no longer be held in bondage by the politicians.

Intellectual slavery is worse than physical slavery.

Tens of thousands of the most intelligent men of the South who are bearing the burden of Southern development and leading this section on to higher grounds of prosperity know that there never was a time when protection was more needed than it will be the day Europe's war ends.

There are many evidences that the Administration realizes this and would seek a way to meet the situation. The straight open way is to admit the failure of the present tariff, and to show that present conditions justify the most radical free trader in becoming a radical protectionist, just as former peace advocates are now advocates of Preparedness.

Will the politicians and the Administration squarely face the situation, or shirk the opportunity and the responsibility?

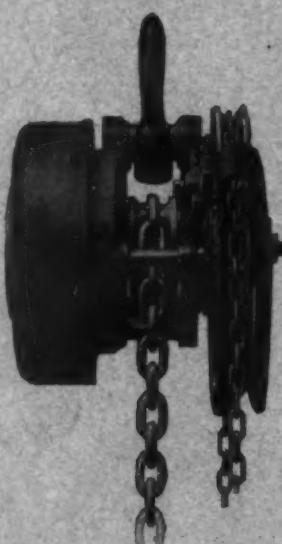
BALTIMORE, JANUARY 20, 1916



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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

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THE SOUTH'S IRON ORE RESOURCES THE NATION'S OPPORTUNITY.

THE figures given in the MANUFACTURERS RECORD two weeks ago from the United States Geological Survey as to the shipments of iron ore from all mines in the United States are exceptionally interesting in connection with a study of the facts which we have repeatedly emphasized lately of the dependence of the country upon Lake Superior ores.

During 1915, according to this report of Dr. Burchard of the Geological Survey, the shipments of iron ore amounted to 55,000,000 gross tons, as compared with 39,714,000 tons for the preceding year, a gain of more than 15,000,000 tons. Of these total shipments, the shipments varying somewhat from the amount mined, 46,318,000 tons were shipped by water from the Lake Superior district, leaving only 8,700,000 tons as the total amount shipped from all other mines, and including in this possibly 1,000,000 tons shipped by rail from the Lake district.

The report of the United States engineer in charge of the Sault Ste. Marie Canal shows that for the nine months ending with December, 1915, the shipments of iron ore through the canal amounted to 41,161,754 tons, while there were shipped through the Canadian canal 4,050,350 tons, a total for both canals of 45,212,104 tons.

In 1915, as shown by this report, a very large bulk of this ore went through the American "Soo" canal, but for the nine months of 1914 ending with December, out of a total of 31,410,000 tons, there was shipped through the Canadian canal 20,893,000 tons, or nearly double the amount shipped for the same period through the American canal.

These figures serve to emphasize the point which the MANUFACTURERS RECORD has reiterated and reiterated in regard to the danger from every point of view of the country depending, to so large an extent as at present, upon the iron ores of the Lake Superior district, which could at any moment be instantaneously cut off.

This situation is of vital interest to the South and Southwest, where an abundance of ores invite the investment of big capital and where large iron and steel developments would be a great safeguard to investors and to the nation against possible calamity through the destruction of the supply of Lake Superior ores.

This situation, however, vitally important as it is to the South and Southwest, is of equal importance to the whole country. It is a sectional opportunity, but it is a national opportunity as well, and the South and Southwest are not more vitally interested in the matter than are other sections. It is the nation's opportunity and the only one to safeguard its future. It is likewise the opportunity and the only one that can possibly be offered to the great iron and steel leaders of the country to safeguard their interests.

Co-Operation, Harmony, Diversity Working Wonderful Changes in the South

UNDER the headings, "1915—Diversify—1916" and "1915—Harmony—1916," the Union Trust Co. of Little Rock carried in the two daily papers of that city on January 4th full-page advertisements which are so interesting that the MANUFACTURERS RECORD is glad to give to them in its editorial columns this still wider circulation.

In the first advertisement, occupying a full page in the Arkansas Gazette, appeared the following:

1915—DIVERSIFY—1916

Last year is gone. We thought at its beginning that no year could ever be so full of ups and downs, good times and bad, so full of education for us all, as the one just past—1914. But we were wrong—1915 brought more good and bad fortune, more upset calculations, more real education, than any year in the lives of any of us. But, far above its minor lessons, it handed down a heritage to this new year—a battle-cry, we might say—

DIVERSIFY!

This is no mere appeal to farmers for crop rotation. That is only a narrow application of the word—a very important one, to be sure. But let us all DIVERSIFY! Let's apply our talents, beyond the narrow limits of our daily tasks, to building better for ourselves, our State, our South, by doing better work. Last year taught us well if we but profit by experience; it created new conditions which proved vastly profitable to those who were able to adapt themselves to the changes—in other words, to DIVERSIFY.

We of the Union Trust Co. have worked, as always, to help build up our friends, and, in so doing, to build up our institution. We are proud of the increase in the past year. For the new year we wish to all our friends

HEALTH, HAPPINESS, PROSPERITY.

On the same day, in the Arkansas Democrat, the Union Trust Co. carried the following advertisement:

1915—HARMONY—1916

If the old year, that died yesterday, had developed nothing else worth while, it would have won its place in the sun by fostering—at least in the South—a new 1915 spirit of HARMONY. How different from a year ago! How hard it is even to remember how chaotic conditions were on December 31, 1914! It looked as if the cotton States, at least, were on the verge of ruin—as, indeed, they might have been.

But with the turning of the year the new spirit manifested itself, whereby the press, bankers, farmers, merchants, lawyers—everybody—all began to get together to find a way out. The result is history. The bankers helped the farmers, the farmers co-operated with the merchants, and in HARMONY the people of these States—notably Arkansas—achieved a very successful year. It is to be hoped, and is surely very likely, that the warning of that near disaster will continue to bear fruit.

The Union Trust Co. has spent a great deal of this year's time in promoting HARMONY between farm and city. It wasn't altogether philanthropic; it was good business trying to help the community, of which we are a part. But the point is that everyone owes some little service to this cause of producing a profitable, harmonious new year. It's good business.

We are very grateful for the splendid loyalty of our friends and customers during the past year. It made the year's work easy and pleasant. We can only reciprocate by doing what we can to help you all have what we wish you—

A HAPPY, SUCCESSFUL NEW YEAR.

In these two advertisements there is a note of good sense and good judgment and good teaching and optimism which ought to be sounded throughout the South.

Very properly, the advertisement entitled "Diversify" suggests that this means far more than merely an appeal to farmers for crop rotation or the development of diversified agriculture. This would be, as suggested, a very narrow application of the word "diversify." The wider and more proper interpretation would be to diversify our thinking, to diversify our activities, to diversify everything that looks to the laying for the State and for the South a broader

foundation on which to build greater material and ethical advancement. This is a fine application of the word. It is an admirable teaching for a financial institution to put forth so strikingly and in such a large way, and it shows that this trust company at least is willing to spend its money in a campaign which helps its whole section and turns the thought of all the readers of these papers to the fact that diversification ought to mean the broadening of our lives, the widening of our thinking and the farther outreach of our horizon in all activities, mental and material.

In connection with this advertisement, the other, entitled "Harmony," is equally as forceful and important, and it states a truth which more and more, as the years roll on, the people of the South will understand.

For some years prior to the fall of 1914 we had been passing through a period in which the South lacked the spirit of co-operation and harmonious working of all interests which had prevailed in the early days of its struggle when it was seeking to overcome the disastrous effect of war. During that period the tendency was away from co-operation. A spirit of antagonism was developing among the farmers as against the merchants and the bankers, and among all classes against railroads and corporations generally. Politicians were more rampant than they had been in early days in seeking to mislead the public, and the public was more easily misled. Lack of harmony was everywhere in evidence, and those who were watching the signs of the times saw in the South's situation in this respect a danger of deterioration of character and a retrograde movement in business due to a general lack of harmony and co-operation which boded evil for the South's future.

The lesson learned from the panicky condition which faced the South in the fall of 1914 was worth to this section more than it cost us financially. It quickened the thought of the South, it stimulated men to broader thinking and to a recognition of the great fact that no man can live unto himself and that no section and no nation can live unto itself. During that period the writer, after a wide trip throughout the South, in giving in the MANUFACTURERS RECORD his impressions gained by a study of conditions in cities, towns and villages and out among the farmers, said that the result of the lesson that the South was then learning would be the quickening of its thought, the broadening of its whole horizon, a stimulation of people of all classes and a wider development of the real life of the South than it had ever known before. It was said that out of this condition would come a larger life for the South and a wider diversification in business as well as in thought, in manufactures as well as in agriculture.

It is now seen that the predictions then made are being fulfilled.

This point is very clearly brought out in the advertisement which we have quoted, in which the fact is emphasized that the press, the bankers, the farmers, the merchants, the lawyers and everybody began to get together in the time of stress in order to find a way out. The result is history. The bankers helped the farmers, the farmers co-operated with the merchants, and everybody got together in a closer spirit of co-operation than ever before in this section since the days of 1861-65.

In the panic of 1907 the industrial interests of this country, under the leadership of Judge Gary of the United States Steel Corporation, began broadly to study co-operation in contrast with cut-throat competition. As the great business leaders of the

country have during the last eight or nine years been coming to realize how co-operation can benefit all interests and make friendships possible where enmities had existed, so in the South during the panicky times of the fall and winter of 1914 there was created a spirit of co-operation in place of the spirit of hostility and antagonism which had been growing at such an alarming rate for some years.

What co-operation has meant in the industrial world, and it is becoming one of the mightiest influences which have ever been brought into operation for the betterment of business and the uplifting of mankind, so will the spirit of harmony and co-operation be to the South—a very mighty influence in advancing the highest interests, educational, ethical and material, of the people of all classes.

Out of this situation will come a far greater and a far safer progress of the South than in any period through which this section has ever passed. It may not surpass relatively that wonderful period which, beginning when the curse of reconstruction had been taken from the South, created co-operation, harmony and enthusiasm in material development which between 1880 and 1900 wrought such marvels as to attract the world's attention. If, however, in proportion to the progress of the world and the advancement already made the South can match that period by this new era of co-operation, harmony and diversity upon which it has entered, there will be no limit to the progress of the coming years.

SENATOR UNDERWOOD'S AMAZING CONFESSION ABOUT THE UNDERWOOD-SIMMONS TARIFF BILL.

THIE frankest confession, so far as we know, that has ever been made in regard to the policy underlying the Underwood-Simmons Tariff Bill is that of Senator Underwood, one of the authors of the bill.

The Democratic doctrine has been "a tariff for revenue," but Mr. Underwood states that he deliberately planned his tariff bill for the purpose of making a deficit in the revenue from the tariff in order to create the basis on which to establish the income tax system. Had an enemy of this tariff bill made such a statement as this there would have been few people in the country willing to believe such a charge, but, coming from the father of the bill, it is an amazing illustration of the disregard of the framers of this bill of the doctrine which their party has for so many years proclaimed, "a tariff for revenue." In place of this, the framers deliberately, according to Mr. Underwood, sought to prevent the raising of a revenue by tariff and aimed to create deficit in order that they might have the opportunity of introducing the income tax system.

In order that we may not be charged with misinterpreting Senator Underwood's amazing statement, we quote from his article the following:

When the present fiscal legislation was written the Democratic party in the House of Representatives, where the legislation was inaugurated, reduced taxation at the custom-house deliberately for the purpose of making room in our fiscal system for a tax on wealth. As the chairman of the committee which reported that bill and as the spokesman of my party at that time, I wish to say that that change of system was not haphazard; it was not written to meet revenue exigencies; it was done with great deliberation, because the party that I then had the honor to represent on the floor of the House believed that it was only just to the great body of American people that at least a portion of the burdens of this Government should be borne by the wealth of the country as well as by the toiling masses. Statistics in reference to all taxation that is levied indirectly on consumption show that taxation levied on consumption does not fall in proportion to wealth, but its burdens rest in proportion to numbers.

Senator Underwood's statement properly interpreted is that this system was inaugurated for the express purpose of penalizing those who by hard work or good investment had accumulated wealth.

No intelligent man is opposed to a wisely devised system of an income tax, but it would be infinitely better if the income tax were left to individual States to be used for the benefit of education and road-building and kindred work.

To deliberately undertake to lessen the revenue

from imports, not for the purpose of claiming to lessen the cost of imported goods to consumers, but for the express purpose of creating a deficit, is one of the most striking illustrations which could be given of the economic blunders of the whole Underwood-Simmons bill.

Senator Underwood's statements, while exceedingly interesting, are of very great value to the country because of this frank avowal of the reason of the existence of the Underwood-Simmons bill, which is as erroneous from other points of view as from that of wise fiscal legislation.

Every intelligent man in the country knows full well that long prior to the beginning of the European war there was disastrous depression in the manufacturing interests of the country. Iron and steel and lumber and cement and many other of the great industries on which rest national prosperity were steadily tending downward to utter ruin. Had there been no war the country would have suffered a far greater industrial and financial collapse—because it had already entered that position when the war began—than the depression in the cotton industry in the South due to the war.

The war instantaneously acted as a high protective tariff would have done in cutting off imports and protecting the industries of this country from being destroyed by the flood of goods made by the low-priced labor of Europe.

No better illustration of the value of a protective tariff in saving the industries of the land need be desired than the effect of the war itself. Just as soon as the first shock of war was over and it was seen that Europe would not for some time to come be able to flood this country with its goods, as it had commenced to do under the Underwood-Simmons bill, business men began to take heart, industry began to revive, and with the demand from Europe for foodstuffs and manufactured products the whole trend of business shifted.

We had been headed down hill to ruin at a gait which would make a toboggan slide seem a snail's pace.

The war situation saved us and we have been on an ascending grade ever since the first sudden shock of war was over.

The war, and the war alone, saved the business interests of this country from a stagnation even greater than that which existed at the beginning of the war, and this stagnation had then entered the point of almost utter collapse. No intelligent man familiar with the business conditions of the country can deny this situation. Senator Underwood's friends and associates in the iron and steel interests of Alabama know full well the truth of this statement, and if he is now or ever was ready to accept the statements of the business men of Alabama, or if he is willing or ever was willing to study the statistics of trade and industry and the prices of iron, he can easily acquaint himself with the extent of the depression that had followed the discussion of the tariff situation and the final enactment into law of the Underwood-Simmons bill.

It had been supposed, however, that this bill had been formulated largely upon the mistaken theory of the freetrader that a low tariff would inure to the prosperity of the country. It was not supposed that this tariff bill was enacted for the express purpose of violating the principle of Democracy which has for some years proclaimed that the tariff should be formulated for producing revenue and not for creating a deficit.

The country is indebted to Mr. Underwood for his illuminating confession, and we feel that his views on the tariff should be given the widest publicity. The MANUFACTURERS RECORD, however, is absolutely opposed to his economic theories, which, according to our views, are economic fallacies.

SULPHUR FOR SULPHURIC ACID.

A SHIPMENT of sulphur from the Union Sulphur Company of Louisiana to Charleston, S. C., is reported for use in the manufacture of sulphuric acid, to take the place of pyrites, the demand for the acid exceeding the supply available from pyrites.

AN EDITORIAL DENOUNCED AS "IDIOTIC," "ROT," "FULL OF LIES," "DISGUSTING IN ITS COARSENESS," ETC.

Peerless Lumber Co., Inc.,
Lynchburg, Va.

January 7, 1916.

Mr. Richard H. Edmonds, Prest.,
Manufacturers Record,
Baltimore, Md.

Dear Sir—We take your paper for the information on trade subjects, and not to read idiotic abuse of Germany, and as one of your subscribers are going to ask that you try to keep such rot as appears in your issue of January 6, out of your paper.

It is not only full of lies from beginning to end, but it is disgusting in its coarseness. We are surprised that any American citizen claiming to be respectable should allow such disgusting stuff to appear in the columns of his paper.

Very truly,
Peerless Lumber Co., Inc.
By James F. Carter, Prest.

This gentle and courteous letter from Mr. Carter is, of course, entirely free from any of the coarseness which he has attributed to the MANUFACTURERS RECORD. It is likewise, of course, wholly free from abuse. It is such a gentlemanly letter that we are glad to give it space in the MANUFACTURERS RECORD and willingly accord it a more prominent position than is given to any advertisers. Mr. Carter is heartily welcome to its value as an advertisement of his lumber business.

Nevertheless, we may be permitted to say just a few things in reply to Mr. Carter.

The editorial to which he refers as "idiotic" and "rot" and "disgusting" and "coarse" and "full of lies"—all very courteous language to come from one who is criticizing a paper for "coarseness"—took the ground that the wilful murdering of innocent women and children on the Lusitania was in keeping with Germany's methods as illustrated in the destruction of Belgium and in the sinking without warning of other passenger ships.

Is Mr. Carter an upholder of this method of cold-blooded, wilful murder on the high seas of innocent people, especially of women and children and unarmed men?

It was also suggested in that editorial that those who uphold such murder are themselves murderers in heart. That sentence ought to have been quoted. It was a statement made by Rev. Russell H. Conwell, D.D., the most distinguished minister of the Gospel in Philadelphia, one who is known probably more widely than any other minister in America, the one whose lecture, "Acres of Diamonds," has been delivered more than 5000 times to the great benefit of millions of people, and one who has, out of his own earnings, given to religious and educational and philanthropic work some millions of dollars. It was Dr. Russell H. Conwell, who, in speaking of the murder of the Lusitania's passengers, said that anyone who could uphold such murder was a murderer in heart. Having previously credited this statement to Dr. Conwell, we overlooked giving him credit two weeks ago for it. It is not original. We regret that the MANUFACTURERS RECORD cannot claim the credit for having been the originator of a sentence so full of truth and so vividly stating the case.

Does Mr. Carter uphold such deliberately cold-blooded murder? If so, then he is one of the men for whom that editorial was especially written. If he prefers to put himself on the side of those who have outraged every principle of international law and made themselves pirates and murderers, then he is welcome to stand on that side of the line. We are glad that the great majority of honest-hearted American men, who have the love of liberty and the love of honor and who would not, themselves, moderately sink into the ocean helpless women and children, do not agree with the position taken by Mr. Carter that the statements in that editorial are "idiotic," that they are "rot," that they are "full of lies," and that they are "disgusting" and "coarse."

Mr. Carter is quite welcome to the space in the MANUFACTURERS RECORD given to the publication

his letter. He is heartily welcome to the privilege of standing before the American people as upholding Germany's actions, since he so vigorously denies the statements made in the editorial to which he refers.

If Mr. Carter had been an intelligent reader of the MANUFACTURERS RECORD, he should have known that it proposes to express its views on this or on any other subject with the utmost freedom, regardless of such abuse as his letter, and that neither by its subscribers or its advertisers will it be bribed or bulldozed.

Some months ago Theodore H. Price, the editor of Commerce and Finance of New York, in writing of this situation said:

Where moral issues are involved, neutrality becomes immoral.

If anyone has better expressed the case than in this brief sentence of Mr. Price's, we have not seen it.

Moral issues are involved, the most far-reaching moral issues which civilization has faced.

The world is in danger, at this moment especially, of losing its proper conception of moral issues.

All civilization was horrified beyond expression by the raping of Belgium, but we held our peace.

Civilization was staggered by the murder of the Lusitania's passengers, but we were told to be neutral.

And one by one, as one black crime after another has marked the history of Kaiserism's warfare, as Armenians have been murdered by the tens of thousands, as Germany's Turkish allies have been called to a Holy War for the express purpose of destroying all Christians—since that is the meaning of the Mohammedan's call to a Holy War—we have gone on letting our sensibilities and our appreciation of morality become lowered; we have grown callous and hardened, and today we are no longer shocked and horrified as we were in the early stages of the war by crimes which at that time stirred the innermost soul of every man of morality and honor.

Our sense of right and honor and morality, individually and nationally, has been gradually growing less by reason of the fearful crimes which have been committed without other protests on our part than diplomatic notes which, even when calling these recreant nations to "strict accountability," have been couched in the friendliest terms.

The man who stood by and saw an innocent baby murderously attacked or a woman outraged and lifted no hand or voice in protest would, from the highest moral point of view, be as guilty as the murderer of the child or the ravisher of the woman.

The man whose wife or daughter had been ambushed, beaten into insensibility and ravished, and who then in friendly notes to the ravisher protested against his crime, but continued the friendly correspondence and permitted the ravisher to discuss the basis on which financial remuneration would be accepted for the crime and the amount of apology which should be offered, would justly gain the supreme contempt of every decent human being. As a nation we have been dangerously near being ourselves in that position.

If Mr. Carter finds the MANUFACTURERS RECORD of so much value to him for the information that it gives on business questions, he will either have to lose the value of that information by discontinuing his subscription or he will have to get a paper whose opinions are, as were stated in the editorial to which he refers and in this editorial, and it is not likely, unless there is a mighty change in the method of carrying on the war, that these opinions will be any more mildly expressed in the future than they have been since the day the war began.

We rejoice that not all German-born people are upholders of the dastardly deeds of Kaiserism and Prussian militarism. There are many honest, true-hearted, liberty-loving, murder-hating Germans who know that Kaiserism is the curse their beloved nation is bearing, and that Kaiserism's overwhelming destruction would mean the salvation of the German people and the true German nation.

The MANUFACTURERS RECORD has the foolish habit of having opinions and of expressing them, despite Mr. Carter's wishes to the contrary.

THE VOICE OF ONE WHO HAS A RIGHT TO BE HEARD.

THE Hon. Hilary A. Herbert, whose illuminating article headed "The Gravest Crisis in Human History—Necessity for Preparedness and for the Proper Location of Munition Plants," appears in this issue, has back of him a long life devoted to his country's welfare. His views should therefore carry great weight. He was the last colonel of the 8th Alabama Regiment in the Army of Northern Virginia. He was severely wounded at the battle of the Wilderness in 1864. After the war he resumed the practice of law at Greenville, Ala., later removing to Montgomery. He was active in all the struggle against carpet-baggers in Alabama from 1867-74, and published in the Century Magazine three years ago an article, "How We Redeemed Alabama," which attracted wide attention. He served in the House of Representatives consecutively from 1877 to 1893. When Cleveland became President in 1885, Mr. Herbert was selected by the Speaker, at the request of Secretary Whitney and the President, to head the Naval Committee, of which he had never been a member. He served on that committee for the eight years 1885-1893, for three terms as chairman and the other term, the Republicans having the House, as first among the Democrats on the committee. He was in President Cleveland's Cabinet from 1893-97, going out with Mr. Cleveland, who was always his close friend.

When Mr. Herbert went in, three small ships had been laid down under Secretary Chandler, the beginning of our new navy. As chairman of the Naval Committee, Mr. Herbert assisted Secretary Whitney in laying a broad foundation for the new navy, with armor plant contracted for at Bethlehem and gun plant established at Washington. Mr. Herbert's first bill provided for seven vessels, and the navy was gradually built up. He conducted his bills on non-partisan grounds. As chairman of the committee during Benjamin F. Tracy's administration of the Navy Department, Mr. Herbert conferred with and supported his measures as loyally as he had done Whitney's. He was a warm friend of Tracy's. When Cleveland came in, 1893, leading Republicans in the House were among those who recommended him for Secretary. Intimately associated with our navy in this way, Mr. Herbert is one who can speak with authority. The nation can well afford to study his wise advice.

INDUSTRIAL GROWTH OF SOUTHERN CITIES.

IN the latest preliminary statement of the general results of the census of manufacturing issued by the Department of Commerce is included the industrial summary of the following Southern cities:

Cleburne, Tex.: As reported in 1914, the amount of capital invested was \$1,463,000, against \$773,000 in 1909, a gain of \$690,000, or 89.3 per cent. This substantial increase in capital invested in industrial enterprises is reflected in the increase reported in the value of manufactured products for the same period. It amounted to \$2,246,000 in 1914, a gain of \$669,000, or 42.6 per cent., over \$1,570,000 in 1909.

Little Rock, Ark.: While the capital invested in manufactures in Little Rock decreased 1.7 per cent. in 1914 over the 1909 census figures, there was an increase of 12.7 per cent. in the value of manufactured products. In 1914 the capital invested amounted to \$5,943,000, a decrease of \$102,000, or 1.7 per cent., from \$6,045,000 in 1909. The value of the manufactured output was \$7,755,000 in 1914 and \$6,882,000 in 1909, the increase being \$873,000, or 12.7 per cent.

Kansas City, Mo.: The capital invested in 1914 was \$53,341,000, a gain of \$10,612,000, or 24.8 per cent., over \$42,729,000 in 1909, and the value of its products was \$60,486,000 in 1914 and \$54,705,000 in 1909, the increase being \$5,781,000, or 10.6 per cent.

Springfield, Mo.: The amount of capital invested in manufacturing in Springfield, as reported in 1914, was \$7,010,000, a gain of \$1,493,000, or 27.1 per cent., over \$5,517,000 in 1909. Its products were valued at \$6,193,000 in 1914, against \$5,382,000 in 1909, an increase of \$811,000, or 15.1 per cent.

Helena, Ark.: Only the figures for 1914 are given

in the census summary of Helena. With 22 establishments, the capital invested amounts to \$677,000, producing an output valued at \$1,121,000.

Hannibal, Mo.: Hannibal, which reported in 1914 \$4,056,000 invested in industrial enterprises, shows a gain of \$1,558,000, or 62.4 per cent., over \$2,498,000 invested in 1909, while the value of its products increased from \$6,195,000 in 1909 to \$6,215,000 in 1914, a gain of only \$20,000, or .3 per cent., for that five-year period.

Morgantown, W. Va.: Of the 49 establishments reported within the corporate limits of the city in 1914, with a capital investment of \$2,306,000, the value of their products amounts to \$2,338,000.

Huntington, W. Va.: For 1914 the capital reported invested was \$7,844,000, a gain of \$2,927,000, or 59.5 per cent., over \$4,917,000 in 1909. The value of the manufactured products was \$11,400,000 in 1914 and \$6,511,000 in 1909, the increase being \$4,889,000, or 75.1 per cent.

Fairmont, W. Va.: The capital reported invested in 50 industrial establishments was \$5,772,000, having an output valued at \$1,384,000.

MR. GRASTY'S NEW FIELD.

MR. CHARLES H. GRASTY, long identified with Baltimore journalism, became a member of the New York Times staff January 15. While his official title is treasurer of the company, it is understood that his activities will have a more public and general scope than this title suggests. Not only will he have occasion for the exercise of his complete knowledge of newspaper business management, but his usefulness will also include promotion of the cordial relationships which the serviceable newspaper always seeks to maintain with its public.

In inviting Mr. Grasty to the Times, Mr. Ochs gave but another demonstration of his plan, as indicated in the acquisition of Mr. McAneny and the late Charles W. Knapp, to gather about him men of sound judgment and well-proved capacity as members of his enlarged cabinet of advisers. As one of the most thoroughly trained all-around journalists of the day, a man of public force, wide acquaintance and broad horizon, Mr. Grasty is certain to be found an important acquisition to the Times staff.

BELGIAN STAMP COLLECTOR A PRISONER OF WAR.

"HAVING much time to spend here in the camp," as he puts it, a Belgian prisoner of war writes the MANUFACTURERS RECORD that he would like for American stamp collectors to help him pass the time more pleasantly by sending him stamps for a new collection. The interesting and appealing document is as follows:

Mr. Editor:

As a Belgian soldier, prisoner of war, I am taking the liberty to send you a little request.

I was collecting postage stamps in Belgium, and my son, too. Having much time to spend here in the camp, I would like to make a collection again, and I should be really happy if you would be so kind as to publish the facts. I will send a keepsake in exchange for some nice postage stamps for a collection. Send registered to F. Baudson, 12 de Ligne, Camp II, Zeist, Holland.

The New York Herald and the New York Times have published this letter. I got some nice stamps from the United States of America.

I hope you also will like to help me to pass some hours pleasantly.

I beg your pardon for the trouble, and with many thanks, I am, dear sir,

Very respectfully yours,

F. BAUDSON.

THE SOLITAIRE DIAMOND IN THE SHIRT BOSOM OF OHIO.

TODAY the pavilion on beautiful Lake Eustis was filled to capacity with an audience from this and surrounding towns to hear the incomparable lecture smiles by Colonel Mulbolland. * * * His theme is the most popular and uplifting, and stamps him as a lay preacher, an eloquent inspirational lecturer on civic affairs. Handsome as Apollo, eloquent as Demosthenes, the personification of Chesterfield, as gentle as a woman, as brave as a lion, the elements are so mixed in him that all point to him and exclaim he is a man. From tears to laughter,

from serious to lighter vein, he kept his audience in constant agitation of expectancy. No one ever heard here so completely fascinated and convinced his hearers by his seductive, persuasive, compelling style. In all seriousness he is an ideal evangel of the modern boasting civic spirit, the magic power of whose eloquence and pleading reincarnates the fellowship idea in the breast of the busy, selfish, indifferent business man. * * * Colonel Mulholland is without doubt the greatest living exponent of the new spirit of service, fellowship and optimism that has made his home city, Toledo, the solitary diamond in the shirt bosom of the State of Ohio.—(Eustis Correspondence, Jacksonville (Fla.) Times-Union.)

That's going some. But how about the other diamonds in Ohio's shirt bosom?

ADVANCED METHOD OF SMALL BORROWING.

AN organization the object of which is to save from the loan sharks honest borrowers of small sums who cannot furnish collateral, and to organize the aggregate wealth of the middle class into a mobile economic force, was founded in Norfolk, Va., in March of 1910 under the name of the Morris Plan, since when it has experienced expansion to over thirty cities throughout the country.

The Morris Plan is the only system operating in this country that recognizes character and earning capacity as security for a legitimate loan to small borrowers. In doing this it annually affords means to thousands of honest people in need of ready money to borrow such without paying extortionate interest on it and thereby also suffering in business reputation. The organization makes many of these borrowers investors by selling them its 5 per cent. interest-bearing investment certificates that can be used as collateral for any further loan or redeemed outright at full value.

The benefit to the country of a plan that fosters thriftiness by offering a fair means of obtaining small loans, without collateral, on a fair basis, and encouraging small investors, can be estimated to some extent by considering the broad economic good derived from such a plan in Germany, where it originated some sixty years ago, and in Italy, where it has been in successful operation during more recent years.

SPANISH-SPEAKING IN THE UNITED STATES.

PROBABLY never before was there such opportunity in this country for individual and national gain in the study of any foreign language as is offered today in the study of Spanish. All of South America, with its many millions in trade, is open to the enterprise of the United States. The enormous business there previously done by European nations, and which these nations are becoming less and less able to handle even partially, is accessible to United States industries as the natural source of supply, now that the former is discontinued. Trade thus now firmly established is likely in large part to be permanent.

But standing as the first and perhaps the greatest obstacle in the way of forming the most mutually beneficial commercial relations with our sister countries to the south is our lack of knowledge of the people and their language, which is largely Spanish. The educators and parents who bring about the study of Spanish are not only placing a great asset in the hands of the pupils, but are serving their country. There is also an opportunity here for people already having established business relations to broaden their field of usefulness by learning Spanish sufficiently well to meet the requirements of business correspondence and conversation.

A RIOT "MOBILIZED AT WHISKY BARRELS."

UNDER the heading, "Mobilized at Whisky Barrels," the Jacksonville (Fla.) Metropolis carried, from Youngstown, O., as a part of the story of the rioting at East Youngstown, the following statement:

At a dozen or more places on Wilson avenue barrels of

whisky, with the heads gone, stood in the roadway, and surrounding them were many men and women gulping down the raw liquor or passing it to friends in the crowd who could not get close enough to help themselves. A number of clothing stores fell a prey to the rioters, and almost immediately men began exchanging their old clothes for the lot they had received. This change of apparel was made in the street lighted to almost noonday brightness from the flames of a hundred burning buildings.

It was hardly necessary to publish the latter part of this statement quoted, because the opening sentence indicated a condition which necessarily would produce the latter part.

Around the whisky barrels in the streets of East Youngstown, according to this statement, were mobilized the men engaged in this rioting and destruction of property. The fact that a very large proportion of them—indeed, nearly all of them—were foreigners only intensifies the importance of recognizing the evil influence of the whisky barrel in this case, as in every similar case. It is around the whisky barrel that more evil has been wrought, more lives destroyed, more misery wrought in the world than all the fearful struggle that is going on in Europe has yet produced.

Whenever men mobilize around a whisky barrel, there the devil is doing his most vigorous work.

Senator Underwood's Apology for the State of the Federal Treasury.

M. B. WILD, Baltimore, Md.

While the article on page 41 of the issue of MANUFACTURERS RECORD of January 13 is not called this, it is really nothing more. The Senator must have recognized that, to use his own language, "the exigencies of the Government require increased expenditures," in the face of which he acknowledges a deliberate purpose to reduce the revenue from customs with the object of increasing it from wealth, and the animating purpose of this action is said to be the benevolent one of relief to the "toiling masses."

The Senator would do much better if he examined his own mind a little more severely to discover how much its workings are or have been influenced by the free-trade theories and practices of England. These theories and practices have hung like a dense fog before the mental vision of many people in this country to prevent their seeing facts that are most obvious to other people. Why should the good Senator display such deep interest for the welfare of the "toiling masses" in the face of the confession of the British Board of Trade that the "toiling masses" of the United States have more income to spend on other than necessities than any other "toiling masses" in the world?

It is perfectly right that wealth should bear its proportionate share of the burdens of this Government, but it is perfectly wrong that to achieve this end measures should be taken to imperil the industrial system which, according to foreign observers, has been attended with most benefit to the "toiling masses."

The Senator must be relying on a sad lack of intelligence in his opponents when he says "the House believed that it was only just to the great body of American people that at least a portion of the burdens of this Government should be borne by the wealth of the country as well as by the toiling masses." Surely he must be aware that a very considerable portion of the revenue at the custom-house is derived from very high rates of duty on luxuries and the finer class of manufactures, so that even in that direction wealth was bearing considerably more of the burden than "at least a portion."

This brings us around to the very essential marrow of the opposition to a protective tariff in this country. The people who do most of the writing, and who consequently assist in formulating opinion, are persons largely of refined tastes but of limited incomes. They look for and know how to appreciate those things commanded by wealth, and because the prices of those things are high and outside their reach, they conclude that the whole fiscal system of the country is wrong. As a matter of fact, they are pleading sympathy with the "toiling masses" when as a matter of fact their whole sympathy is with themselves, though they don't know it.

The moderate income which originates this frame of mind is more generally found in the South than in the North, which lends force to the other conditions which

have obtained in the South favoring a low tariff for the encouragement of export of the South's raw materials. It would be interesting to know how far the Senator, with his touching sympathy for the woes of the "toiling masses," is prepared to go in levying on the wealth of the country for the expenses of the Government. The question of the revenue from customs has been sadly complicated by the abnormal conditions created by the war, but taking the nine months ended with September, 1914, up to which date this revenue cannot have been materially interfered with by the abnormality, and comparing it with the corresponding periods of the two preceding years, it is seen that 1913 decreased from 1912, \$8,478,138 and 1914 from 1913, \$44,432,744, while over the whole period the decrease was \$52,910,882, which it will be observed is a sum more than double the \$26,000,000 alleged by the Senator to be the falling off in a whole year. In the same time the percentage of the free in the total imports jumped from 53.26 to 61.19.

The heavy deficiencies in revenue, both actual and prospective, with which the country is confronted can no doubt be placed on wealth, but that is not the most serious aspect of the question. The really essential and important thing to know is what are the elements that are bringing about these deficiencies, and, judging by the state of the customs revenue, and the known fact of the extremely heavy increases in the imports of manufactured goods prior to the war, contemporaneously with marked shortage of work in American factories, points unerringly to an important, if not the most important of them. This element is at work, too, not only to heavily decrease the national revenues, but to imperil those very people it is alleged to benefit, viz., the "toiling masses." Leave it at work long enough and these numerous gentlemen will have the pleasure of working for European wages with the European result of leaving them a less income to spend on their pleasures.

Might we venture to commend to the consideration of the sympathetic Senator the undue influence of the large body of professors who fill the columns of the press and the magazines with writings all more or less based on the "a priori" ground of England's experience with free trade, and fortified by a sense of injury that the things they like to buy are all so expensive?

Improved School Facilities in a Georgia County.

H. I. HASSON, R. D. 62a, Brunswick, Ga.

Knowing that your valuable paper favors all progressive movements of the South, I am taking the liberty of writing you in reference to our new community school.

Glynn county, Georgia, last spring purchased a 10-acre plot four miles from Brunswick and erected a fine white brick school, three schools being consolidated. The children from a distance are transported in a large bus. A good dwelling for the principal was also erected and a building for the teaching of domestic science. The balance of the ground will be planted under the supervision of the County Farm Demonstrator. Talks and entertainments are held twice a month by the community. We expect soon to have a good large library.

American Bank Reporter.

The American Bank Reporter Blue Book, which has been revised and corrected up to a recent date, presents a comprehensive and alphabetical list of all banks in this country and in Canada, including National State, savings and private banks, arranged in regular order by States and giving the names of their presidents, vice-presidents, cashiers and assistant cashiers, besides their correspondence in New York and several other large cities. It also contains lists of attorneys, and all bank officers, besides the directors of banks in all the principal cities. A synopsis of banking and commercial laws in the various States and in Canada is also a valuable feature. Maps of the different States and Territories are included. The volume is published by the Steurer Publishing Co., 149th street and Bergen avenue, and 5 Beekman street, New York. It has more than 1900 pages, and is handsomely bound in blue cloth, with silver lettering.

The Gravest Crisis in Human History

NECESSITY FOR PREPAREDNESS AND FOR THE PROPER LOCATION OF MUNITION PLANTS.

By HILARY A. HERBERT, Secretary of Navy Under President Cleveland.

[As one long familiar with the needs of the United States Navy, Hon. Hilary A. Herbert is peculiarly qualified to speak of the problems and the necessity of adequate preparedness. It was under the Cleveland administration that the modern navy of the United States was begun, and if the recommendations made by Mr. Herbert, while Secretary of the Navy under President Cleveland, had been followed, the country would have been in a far greater state of preparedness than it is today. Mr. Herbert's experience while Secretary of the Navy in seeking to develop the navy, his experience during the Civil War and his close study all his life of the great problems of government give weight to his views. His article is, therefore, a timely and most important contribution to the discussion of the present weakness of our national defense and the possibilities ahead of our country. He writes not in the enthusiasm of youth without due regard to his words, but in the ripened scholarship and experience of one of the South's great leaders for half a century, who fully weighs the responsibility of what he says.—Editor Manufacturers Record.]

After a careful reading of recent editorials in the MANUFACTURERS RECORD on the topics assigned to him for this article, preparedness and the location of munition plants, the writer undertakes his task with a painful sense of inability to add anything really new to the unanswerable articles the MANUFACTURERS RECORD has already put before its readers. These editorials should be presented in pamphlet form for the consideration of Congress and the country.

We are in the presence of the most remarkable war in human history, a war that cannot fail to affect the destinies of mankind, for good or evil, more profoundly than has any other since the civilization of Greece and Rome went down in the wars of the Caesars.

The hitherto unbelievable and almost inconceivable is now the commonplace.

To the ordinary observer in July, 1914, it was unbelievable that Germany, with only Austria-Hungary to back her, would make war against Russia, Great Britain and France combined.

Great Britain (the United Kingdom alone, without counting in her colonies), with France and Russia, had twice as many men available ultimately for military service as had Germany and Austria combined, but Great Britain, counting on her navy for defense, had only some 695,000 soldiers scattered all over the world, had no compulsory conscription law, and was woefully lacking in munitions of war, and all this Germany knew. France, too, was lacking in munitions of war. Preachers of economy there, as in England, had been declaring against extravagant military expenditures, against the makers of ammunitions of war, who were claimed to be manufacturing war scares when there was to be no war, and so France was unprepared, and all of this Germany knew. Russia was insufficiently supplied with munitions of war, her three single-track railroads traversing her vast territory were wholly insufficient for the transportation of her great armies and their supplies, and she was entirely without any system of transverse railways that would enable her to converge her forces on pivotal points.

All these things the War Lord of Europe knew on the second day of August when he penned the declaration of war that has brought about the most frightful calamity that has afflicted mankind since the waters of the flood left only Noah and his Ark to tell the story of the past.

The whole world now knows these facts just as the Kaiser knew them on August 2, 1914.

It was undoubtedly the unpreparedness of the Allies that caused Germany and Austria to make war against nations that had twice their fighting strength; but in the face of all of this evidence, our pacifist of today thinks that it was the competition in preparedness that bred this terrible war. The way to prevent war, he insists, is for a nation not to prepare for war at all, but to be good and set an example, like an individual, of fair dealing and justice to all.

This reminds the writer of an experience in his early boyhood. A boy of eight started to school with the admonition from his pious mother to be good and not to fight. That rule had worked well when the boy was among his sisters at home, but at school he was with boys, and as soon as they "got onto his curves" the poor little fellow got kicked and cuffed, even by undersized would-be little bullies, until at last, with the approbation of his father, the little chap, after many

tough battles, established his reputation as a fighter. After that he enjoyed peace.

That good mother of seventy-odd years ago, like the pacifist of today, had omitted to consider the other boys.

No people ever yet established their independence except by fighting for it, as did our ancestors, and we are not informed even in Holy Writ, of any nation that, once having independence, ever kept it by being good and setting an example to others. Such a sight this world will see when the millennium comes. Up to the present we have no account of any nation that ever maintained its independence long enough to enable a historian to record the fact of its existence save only by preparedness to defend it. This does not mean that small nations can or do rely upon their own resources alone, but it does mean that no nation, with territory enough to be of importance to others, has ever yet maintained its independence, even with the assistance of other nations, without being prepared itself to assist in upholding it.

The one often cited exception to this rule is China, a nation of 400,000,000, and, without any sufficient army or navy, long the prey of other nations, helpless as a great whale stranded on the seashore, with greedy landsmen cutting and carrying its fat away to distant markets.

The opponents of preparedness, while ignoring the plainest lessons of history, are advancing some novel propositions.

The esteemed Florida Times-Union, in an editorial some weeks since which was a reply to an article from this writer that related to President Wilson's very modest program of preparedness, made this remarkable statement:

"All governments which recognize the political freedom of the citizens are fit for peace and unfit for war."

This means, if it means anything in the connection in which it was used, that the 13 colonies, after winning their independence in eight years of war, established a government that, not being fit for war, could not defend itself and therefore should not go to the trouble or the expense of making any preparation.

Switzerland is the oldest republic in the world. It is quite as democratic and in some respects a more purely popular government than ours. Its republicanism is as rock-rooted as are its snow-capped mountains. It is a little country on which rests the left flank of the great Germany army, the right flank of which abuts on the North Sea. The right flank of the French army also rests on Switzerland. Either of these opposing armies could flank the other by marching over Swiss territory, but neither of them has dared to attempt it. There stands little Switzerland, with a population of less than that of the State of Massachusetts, war raging just over her borders, her army mobilized, protecting her neutrality. A statement in a press dispatch now weeks ago was that this had already cost little Switzerland \$65,000,000, which is calculated to provoke a smile at the expense of a Southern Congressman who recently stated that \$500,000,000 a year for five years would bankrupt 100,000,000 of people, who for years have been uncomplainingly paying more than \$150,000,000 annually in pensions on account of a war that ended 50 years ago.

Little Switzerland successfully defends her territory because every able-bodied man in it is, and was before the present war began, a trained soldier. She can

always mobilize promptly 240,000 men, and has as many more in reserve. On the same basis as Switzerland, it is stated that the United States could muster 8,000,000 soldiers for our front lines and hold 8,000,000 more in reserve.

Coming home—when we began housekeeping under our present constitution our new form of government was an experiment. It was a central sovereignty over local sovereignties, a constitutional republic, its powers carefully limited. Yet there was no limitation as to the number of soldiers or of sailors it might enlist under its power "to raise and support armies" and its power "to provide and maintain a navy." That the government they were establishing was "unfit for war" did not occur to the framers of our constitution. That is the concept of our modern pacifists. Jefferson, like other strong friends of the people in the long ago, while they were yet wanting in experience and possibly in devotion to their new government which was as yet untried, was undoubtedly afraid to give into their hands such armies as other nations had. The fear was that the armies might control the people instead of the people controlling the armies, but never until the present day has the thought even been suggested that our Government was "unfit" to "raise" such armies and to "maintain" such a navy as might be needed for the "common defense."

In the days when Monroe was President and Jefferson at Monticello was his adviser, our Federal Constitution had already become in the eyes of all Americans, as Gladstone, the great English statesman, long afterwards described it, "the wisest instrument ever struck forth in a given time by the brain and purpose of man." From the days of Monroe to this that Constitution has been, in peace and in war, foreign and domestic, the American ideal. It has stood every test. Even in that supreme hour of the nation's peril, 1861-1865, when dismemberment of the Union was in suspense on the edge of battle, not a soldier was enlisted, not a gun was pointed against the American ideal, the Constitution of the Fathers. Abraham Lincoln at Washington had sworn to support that Constitution, and the soldiers of the Union under him were fighting to maintain it. Jefferson Davis, the President of the Confederacy, had sworn as such to maintain that same Constitution, modified to mean exactly what the Southerners believed the Fathers had intended, and every Confederate was fighting to uphold, not any new, but the Government of the Fathers, the American ideals, and Federals and Confederates were alike demonstrating in their four years' struggle that a "constitutional republic" was "fit for war." The Confederates for the last two years of the war were demonstrating that such a republic could even make war without money. Its soldiers were fighting for their ideal Government, and no other, practically without pay, and their Government was feeding them by a "tax in kind" upon property.

The Union ideal prevailed after four long years, and now, while the passions of war were at white heat, was to come the supreme test of the stability, the fixedness in the hearts of the people, North and South, of the old Constitution. Could it survive that crisis?

For a time the momentous question found no answer. For a time the right of self-government in the 11 Southern States was lost. Fanaticism and the passions of the hour had placed the alien and the ex-slave over the Southern people, who had been the sovereigns, and the final and conclusive test was on. In all of these 11 States, the Southerners, clinging to their ideals

of self-government, resisting intimidation and refusing all the bribes of office, stood fast, and finally, out of even the ordeal of reconstruction, Americanism, local self-government by the States, under the old Constitution, came triumphant. Reconstruction days had passed, and soldiers, Federal and Confederate, led the way to a union such as the Fathers had dreamed of, but had never lived to see, and today every monument in our land, to Federal or Confederate veterans, on battlefields, in cemeteries, in cities, in towns and in hamlets, is a monument to our Federal Constitution.

The writer of this article has heard of none, and he does not believe that there is an intelligent veteran of our late war, Union or Confederate, who lends his ear to the idle prattle that this Government is not fit to make war if need be, or who doubts that it ought to prepare not only to defend itself against any possible or probable aggression, but also to stand for all our rights now as well as when war is closed.

Whether the plan of the President as now formulated shall be carried out specifically is not material. What is essential is that preparedness should be efficient. Details should be carefully considered. One suggestion, founded on his own observation, the writer ventures to name for consideration. In 1861 the University of Alabama was under military discipline, and when its senior class, consisting of some 50 well-drilled students, offered their services to the Governor of the State, Governor Moore, instead of accepting the students as a company, advised them to go home and offer their services as officers to untrained volunteers. As a consequence, not to speak of what those students did for other commands, that class furnished to the Alabama Brigade, best known as Wilcox's, one general, one colonel, one captain, besides other highly efficient officers. A long step toward preparedness would be to condition every appropriation for agricultural or other colleges on a given amount of military education and to encourage such education in high schools and other State institutions by furnishing them with army officers as commandants and with arms and ammunition for practice purposes.

If we maintain throughout the present war our neutrality firmly and impartially, not one of the leading belligerents will be sincerely our friends. All will be hostile to the claims for damages we will then have pending, and possibly some of them with whom we shall have had angry controversies may present counter claims.

It will be a serious thing for this Government if, at that time, when those nations shall all be at peace with each other, our President shall have behind him a divided people and be unprepared to enforce our rights.

But beyond all of this looms up the Monroe Doctrine, which our pacifists think they dispose of by saying that we do not need a larger army and navy now, when Central and South American countries are willing to co-operate with us in support of the Monroe Doctrine.

Ever since that Doctrine was proclaimed, European nations have been busy at home jealously watching each other and guarding the balance of power in Europe, but during the whole of that period all of them, with the possible exception of Great Britain, have been industriously refusing to recognize the Monroe Doctrine. Even Great Britain, when in 1896 she settled the Venezuela dispute on our own terms, pointedly denied our claims that the doctrine applied in that case, and nowhere in all of the discussion of that Venezuela question did she admit it to be international law as we understand it. There is absolutely no reason for us to believe, or even hope, that Great Britain will be, when the present war is over, both in a condition and in a mood to ally herself with us to defend that doctrine against any one of the powers with whom she will then be at peace. If the "balance of power" question in Europe shall have been disposed of during this war, and that was Germany's purpose in the beginning of it, then the time will come, and no one can tell how soon, when we shall know whether our army and navy are sufficient to maintain the Monroe Doctrine. The burden of any test would be upon the United States, and, with the ocean now only a highway for swift battleships, aided by aerial fleets, our is the most vulnerable of all nations. Our great cities are by the sea, so are those of our Central and South American friends.

The soldiers of Alexander and Caesar looted in

a very crude way, every man for himself. Cultured Germany has reduced the plundering in towns and cities to a science. The wealth of American cities on the seashore is estimated in millions and billions, and "indemnities" when war is made by Germans are collected by order of the commanding general. What a picnic for German veterans would be an excursion to America, brushing aside unprepared militiamen and assessing Boston and New York and other centers of wealth!

If Germany, her fleet intact from its shelter behind Heligoland and her millions of veterans off of active duty in Europe, should seek to hoist her flag over Brazil, or that part of it where 500,000 Germans are already settled, the task of our fleet would be to prevent transports landing in Brazil, and at the same time to protect from attack our Atlantic and Gulf coasts, Porto Rico and the Panama Canal. The task of the German commander would be to seek and destroy some material portion of the American fleet when it was guarding our coast line, and having accomplished this, the remainder of our ships would be at his mercy. Any counter-attack by us on the coast of Germany would, with its protecting mines and fortresses, be as impracticable as it is now to the nearby fleets of Great Britain.

The task of every Central and South American country would be, all of them being our allies and all subject to attack, primarily to defend its own shores. Not one of them has at present a fleet that would be more than or even sufficient for that purpose. All of them, in constant readiness for an attack from the sea, like the Confederate States in our own war, would be obliged to keep garrisons in every seacoast town or city, and possibly none of them has any army that it could spare to help its neighbor.

The mere statement of this case, all of which our statesmen will undoubtedly see, justifies the presumption that Congress will unhesitatingly vote preparedness—preparedness sufficient to avert all probable attacks on the Monroe Doctrine, or that, if it should not prevent such a disaster as war over that American section of the Code of Nations, will at least suffice to enable the United States, with the resources at their command, to safeguard themselves and their people against successful invasion by a foreign foe, no matter how strong.

The argument that preparedness will benefit the "special interests" is not worthy of an answer. Such a plea would defeat any, even the most necessary, expenditure. There can be no appropriation that will not put money in the pocket of someone. But if there is any instance in which "special interests" are to be carefully watched and their influences guarded against, it is in the purchase by the Government of war material. Munitions of war are needed only by governments. Manufacturers have no other customers, and experience demonstrates that Government must expect to pay extortionate prices unless it exercises unusual care. **The most effective method heretofore practiced seems to have been competition between Government and private concerns, which can only be secured by the establishment of Government plants.**

When the program of building a modern navy was entered upon, some twenty-odd years ago, our policy was to have plants at two or more navy-yards, with equipment that would not only suffice for repairs, but for the construction in them of ships of any class whatever. Government prices would thus be comparable with contractors' prices, while the letting out of most ships to contractors, and the consequent multiplication of shipyards would put the country in condition, should occasion demand, to rapidly increase its navy. The policy was a success. There was fair competition all around, and in certain recent lettings the Government has outbid contractors.

The Government established a gun plant at Washington for the assembling of guns, the component parts of which were obtained by competition among contractors. Some guns have been furnished by contractors, who compete with Government prices. This plan has worked well.

But in armor contracts, the Government, having no competing plants, there has been from the outset nothing but combination and a monopoly, which has for the most of the time exacted exorbitant prices.

In 1896 the Secretary of the Navy reported to Congress that the two armor plants making arms for the

Government had combined and were charging an average price of about \$500 per ton, when a fair price would be \$250 per ton. The report was elaborate, contained all of the information obtainable and is now on file.

That report, in addition to an estimated fair price, contained estimates of the cost of a Government armor plant, which was alternatively recommended. The result was, after much discussion and long delay, a large reduction of the price paid for armor, no provision for an armor plant and the subsequent entrance into the "armor combine," which still exists, of a third contractor. Secretary Daniels recommended to the last Congress a Government armor plant, with as yet no result.

These experiences of the Government in contracting for ships, guns and armor seem clearly to indicate the advisability of one or more Government munition plants to secure competition in prices and to enable the Government to locate them as strategical considerations may indicate. All American munition plants are now located in a narrow strip of our Northeast. All are peculiarly accessible from Canada. War with Great Britain and Canada is almost inconceivable. So was the present war, until it came, but the military strategist takes no chances, not even the remotest, if avoidable. Then again, all of the present munition plants depend directly or indirectly on ore imported from Canada, Chile, and perhaps other countries. This flatly contradicts our policy, adopted when the new navy was begun, that the American navy should be constructed entirely of American material.

Leading lessons taught by the present war are larger guns and more of them, higher explosives and more of them, and new emphasis has been placed on the advantage of quickening and cheapening transportation of supplies by interior and shorter lines.

All of these considerations point to the necessity of munition plants at convenient places from our South Atlantic, our Gulf and our Pacific ports.

But a consideration more imperious than all of these is that the safety of the whole country must not be allowed to depend upon plants in any one section. The capture by an enemy of the northeastern section of our country, with all of its great cities and all of our munition plants, would be fatal. The East already supplied, new munition plants should be located at points from which armies or forts guarding our South Atlantic, Gulf and Pacific ports could be supplied. These points should be close enough to secure rapid and cheap transportation, but not close enough to be easily raided by landing parties; at points from which railways radiate in every direction, and preferably at points that could not be reached by enemy gunboats or transports on rivers, and particular care should be taken to see that all of the material needed by the plants should be obtainable within the shortest possible distance, so that supplies could not be cut off by raiders.

Offering Inducements for Industrial Development.

GLASGOW DEVELOPMENT CO., Charleston, W. Va.

We have a site of 50 acres adjoining a town of 200 population in close proximity and connected by electric street railway with Charleston, W. Va., and in the heart of one of the best natural gas territories in the State.

We are offering free factory sites and a four-cent rate on natural gas to factories, and would be pleased to have you put us in connection with parties to whom cheap natural gas on long-time contracts would appeal.

Aluminum's Wonder Story.

Illustrative of the marvelous spread of our mining interests, J. Arthur Joseph, Financial News Bureau, New York, calls attention to the fact that in 1883 there were only 83 pounds of aluminum produced in the United States. This year our production is estimated at 100,000,000 pounds, or half of the world's output.

Nation's Commerce Hampered by New York Port Conditions

SHOULD STIMULATE RAILROADS AND OTHER INTERESTS TO UTILIZE SOUTHERN PORTS

[This interesting presentation of the situation at New York should stir all railroads and business men to take a more active part in aggressively working to develop trade through Southern ports. New York's congestion must increase until business is turned to Southern ports. New York's extremity is the South's opportunity.—Editor Manufacturers Record.]

[Special Correspondence Manufacturers Record.]

New York, January 14.

Greater New York, confronted with a congestion in its freight-choked harbor, which is assuming the proportions of a national business disaster, is actively at work to remedy the situation.

Early in 1916 it will complete improvements now under way that will help largely in adding to port facilities. In addition, much greater activity will be shown in attempting to secure the Federal, State and municipal aid imperatively necessary to develop the harbor to meet the needs of the tremendous new volume of foreign and domestic business.

Manufacturers of the United States are just now vitally concerned in what happens at the port of New York, as well as at all other ports. Because of the vast measure of their overseas trade, they have succeeded in accelerating Manhattan's interest in the matter.

They have pointed out that if New York expects to occupy any longer its proportionate position in relation to the world's trade, it must act quickly in the further development of the natural facilities of its harbor. There is no single question which just now is of greater importance in their efforts not only to secure, but to hold world trade, than proper port facilities here. As they view it, New York should be held responsible in a business way if it fails under existing conditions to rush the work under construction.

In 1915 the port of New York handled nearly 60 per cent. in value of all imports and approximately 39 per cent. in value of all exports of the United States.

This great total of incoming and outgoing business, exceeding in value \$3,000,000,000, was in addition to the vast tonnage of freight for domestic use in New York and that received here for transshipment through the harbor to New England cities.

Until the early fall the facilities of the port, while quite inadequate for prompt dispatch of the expanding traffic, did not become a menace to national prosperity. Since the first embargo found necessary by the railroads, however, the situation has become one of national, and even international, importance.

It is now hurting foreign trade; it is retarding in some instances the production at iron and steel plants; it is threatening shut-downs to some of the industries of New England, and is straining beyond all resources the freight-handling capacity of the trunk line roads of the East.

As one measure of relief New York City is rushing to completion the last links in seven miles of new wharfage space, giving 45½ acres of additional dock space. Work on this was begun in 1914, and the last of it will soon be finished.

It is now negotiating for contracts for the construction of the long-projected freight railroad in South Brooklyn. This project will give a municipal freight railroad 5½ miles long. It is to be leased to a company composed of representatives of all the trunk line railroads which reach the port of New York.

It is also negotiating with the New York Central Railroad in an endeavor to adjust matters in dispute for years, so that the rail lines of the west side may be improved with modern freight facilities.

There is now under way on the west side, at 46th street, a pier 1000 feet long and 150 feet wide, with slips on each side 300 feet in width. This is the first passenger pier designed to accommodate the largest ocean-going vessels. There will be three piers in all of this type at this point.

At South Brooklyn, near 35th street, the city is completing three piers, which, with the two already there, will make an important marine freight terminal. These are to be the longest commercial piers in the world, with steel sheds and concrete docks, railway tracks, etc.

Other suggested municipal improvements are in-

tended to include direct railroad communication with all water fronts by means of a marginal water-front road and tunnels under the harbor, so that transcontinental roads may have direct access to all piers and terminals in the greater city. But these are future projects and cannot be considered in relation to the present crisis.

Chief among the criticisms which are being made against New York because its course as to port improvements is now becoming a menace to the onward progress of national commerce is that it apparently seeks to hamper capital when private capitalists employ it for new terminals. Private capital when put into terminals is taxed for the privileges the city gives. It is also required to meet the competition of municipal docks and piers leased to transportation companies at rental so low that they will not pay carrying charges. The resultant deficit of from 1 to 2 per cent. annually is made up by the taxpayers.

While the city spends millions for constructing piers, it operates them as separate units for the receipt and delivery of freight. While New York talks of needed improvements, Baltimore, Boston, New Orleans, Norfolk and other cities build and add them to their port assets.

Although present international conditions and the domestic situation offer tremendous opportunities if immediate provision were made for industries requiring terminal, wharfage and pier accommodations, New York lags. The present export business of the country is the greatest in history. But the leading port of the country is almost submerged by the mountains of freight. American manufacturers are trying to get to waiting customers abroad.

The committee of traffic men of the railroads entering New York give a large share of criticism for prevailing port conditions upon the steamship and dock owners. They complain strongly of the delay in unloading railroad lighters. As one possible remedy, they may ask for an increase in lighterage charges.

Some relief is expected by the roads because of the approval by the Commerce Commission of their recent action in cutting from 30 to 15 days the free time allowed shippers to take goods from cars at terminals. As an illustration of how steamships delay harbor traffic, a concrete instance is cited by the railroad committee. In two days' observation they found 70 lighters waiting for turns at the ships of one line. With higher lighterage charges they hold that instances of this sort would not be so common.

It cannot be charged against the railroads, either by the city or the steamship companies, that the railroads are derelict in the matter of improving their facilities. They have been increasing their pier accommodations and otherwise trying to keep abreast of the rising tide of business.

The New Haven has completed its eight new piers on the East River, which consolidates its East River terminals into an effective terminal unit, with about 150,000 feet of deck space. The Baltimore & Ohio has just completed a new pier in the East River, with 40,000 square feet of deck area, and the Delaware, Lackawanna & Western one at Catherine Slip, in the East River, of the same size.

In the North River the Lehigh Valley has completed two piers, each with 1600 feet of wharfage, one of which will be used by the Jersey Central. The Baltimore & Ohio, on Staten Island, and the Pennsylvania and New Haven, in the New York Connecting Railway, are each investing yearly large sums to increase their facilities for handling New York port freight traffic. On the Jersey side of the Hudson, from the Statue of Liberty to the Palisades, all the river edge has been taken over for railroad betterments for terminal purposes.

Financial interests seeking the best way to develop

and hold after the war a real world trade are following with interest the suggestion that the United States shall establish at New York a free port patterned after those already in existence at Hamburg, Copenhagen and Cadiz. In this free zone goods could be reshipped, repacked, stored, exhibited to the trade and manufactured without paying duty.

A free port for such purposes is admittedly a powerful magnet for shipping. It might in this instance kindle the necessary fire under both the Government and New York City, which would result in removing New York Harbor as a hindrance to a larger foreign trade.

BIG ELECTRIC GENERATING STATION.

Plans for New Plant of Clinchfield Portland Cement Corporation.

Writing to the MANUFACTURERS RECORD regarding his company's recently-announced plan for manufacturing lime, John A. Miller of Nazareth, Pa., president of the Clinchfield Portland Cement Corporation of Kingsport, Tenn., tells of another important addition proposed for Clinchfield facilities. Mr. Miller writes as follows:

"In regard to our hydrated lime plant, this is designed to have a capacity of quick lime, or agricultural lime, or hydrated lime at the rate of 4 tons per hour, and in addition from 8 to 10 tons of ground limestone rock for agricultural use per hour. We hope to have this plant completed and in operation within about six months. The raw materials from which this limestone is to be produced are of the finest quality, and will produce a superior article.

"I might add that we propose to build and equip an electric power distributing station of from 7000 to 10,000 kilowatt hours, the several large enterprises located in and around Kingsport having already closed contracts for the supply of current for their requirements. This development will take the form of an extension and enlargement of our present power plant, which supplies the current required in the operation of our own plant. The plans contemplate a plant of the most modern design, equipped with the latest and best power-generating machinery on the market, and it is proposed to have the work completed within about six months. L. L. Griffiths, our general superintendent, Kingsport, will be able to give detailed information regarding the lime plant, and, as soon as the plans are decided upon, regarding the power-plant development."

Davison Chemical Corporation.

In connection with its recently mentioned reorganization, the Davison Chemical Co. of Baltimore will continue as the Davison Chemical Corporation, and has issued an official statement describing its properties. Official statement may be briefly summarized as follows: Main plant on tract of 410 acres; harbor frontage of three miles; owns two other plants; annual production 260,000 tons sulphuric acid, fertilizer acid, acid phosphate, etc.; upon completion (by March) additional facilities output will be 300,000 tons annually; also has under construction acidulating plant with annual output of 300,000 tons acid phosphate; owns 2000 acres in Florida, estimated to contain 7,000,000 tons high-grade pebble phosphate rock; owns sulphur-bearing ore land in Cuba, with 1,400,000 tons sulphur pyrites blocked out; has sold 85 per cent. of total output of acidulating plant until 1922.

Development of Coal By-Products Industry Declared Vital to National Preparedness*

CO-OPERATION OF GOVERNMENT AND INDIVIDUALS NECESSARY TO
SUCCESS—NATIONAL PREPAREDNESS MUST INCLUDE MANU-
FACTURE OF NITRIC ACID FROM THE AIR

By DR. H. W. JORDAN, Semet-Solvay Company, Syracuse, N. Y.

[Unless the United States establishes a complete and profitable National coal products industry on a basis to keep abreast with all scientific progress, our program of 'national preparedness' will descend to the plane of comic opera.

"Our entire investment in 'national preparedness' will be wasted money if it does not include the manufacture of nitric acid from the air on a scale to render us absolutely independent of foreign nitrates."

Dr. Jordan is one of the foremost chemical engineers in the country specializing in this line. For nine years he was associated with the Solvay Process Co. of Syracuse, manufacturers of soda ash and alkali products, and since 1900 has been with the Semet-Solvay Company, undertaking special chemical engineering work in the manufacture of ammonia salts, synthetic carbolic acid, aniline and similar products derived from coal. He takes an active interest in common school technical education and welfare work in Syracuse. His many years devoted to the development of coal products equip him to speak with authority on these questions of such vital importance to the nation.—Editor Manufacturers Record.]

During 1915 we read statements in the press almost daily which gave the impression that our American chemical industry was wholly unable to manufacture synthetic coal products, and that the only relief in sight was from the wonderful discoveries of a small group of chemical amateurs, who, having patriotically hurled themselves into the situation since the war began, were on the verge of evolving the entire 900 synthetic coal-tar dyes and the whole list of pharmaceuticals from palmetto and other sources hitherto unsuspected as being fundamental to organic chemical products. These statements, by implication and by omitting mention of the extensive plants erected and put into operation by the old-established chemical companies in 1915, tended to create the public belief that these companies were doing nothing to supply the American market.

Some of the most important products which were widely heralded as having been produced for the first time in America in 1915 were manufactured by these companies 15 to 30 years ago. Benzol and its homologues have been regular American products, with shipment in earload lots or tank cars, and with occasional exportation to Europe since 1900. Salicylic acid was manufactured at Jersey City by Zinsser & Co. from 1880 until 1897, when foreign competition closed the plant.

Synthetic carbolic acid was manufactured by the Semet-Solvay Company from benzol at Syracuse in 1900 and the following years in quantities up to 2500 pounds daily. This carbolic acid was synthesized into trinitrophenol, commonly known as picric acid, which was bought by the United States Government for use in national defense. The United States had several well-equipped plants prior to 1885 for manufacturing the principal coal dyes of that day. The industry grew and produced an increasing number of synthetics, from which all those which could surmount the natural and artificial barriers in the road to a complete American coal products industry. The principal ones of these manufacturers have continued without interruption, and constitute the main body of our present organic chemical industry.

The failure to give credit in the daily press for the large amount of capital invested and for the extensive work accomplished during the past year is not fair to those American companies which built up our great American chemical industry during the past 30 years, and who are now the prime movers in expanding our American coal products industry to meet the new conditions.

The Benzol Products Co. is an example of this growth. Organized in 1910 by men long associated with the acid, alkali and coal-products industry, it began the manufacture of aniline and aniline salt at Frankford, Pa., in the aniline plant operated several years before by the late Dr. Jayne. Although the com-

pany's output of aniline in 1910 was but a small percentage of the American consumption, the English and German producers immediately dropped the price from 10 cents or 11 cents per pound, where they had held it for several years, to 9 cents or 8 cents per pound.

Most of the American consumers of aniline refused to buy this American aniline at the fair price of 9 to 10 cents, at which it was offered. Instead, they followed their usual custom and sacrificed the American producer by supporting the cut-rate foreign producers.

These American consumers were the very ones who rushed to Washington when the war began and frantically implored the Department of the Interior to dig up right away, quick, through the Division of Mines, some unfailing source of supply to provide the 2000 or more synthetic coal dyes and pharmaceuticals which had required 45 years of German science and organization to develop. The trip to Washington was easy for them. They had been there repeatedly since 1880, whenever a tariff bill was under consideration, to advocate no tariff on dyes.

The Benzol Products Co. received the support of a few of the most farsighted American consumers, who realized that the permanent establishment of aniline manufacture in the United States was of far greater value than the profit for a few years on their purchase of aniline at 2 cents per pound below its former price. With their support the manufacture of American aniline was continued.

Since the war a new plant was built at Marcus Hook, Pa., and put into operation in August, 1915, with ultimate capacity equal to the former United States consumption of aniline. Notwithstanding war conditions, which multiplied the price of its raw materials, benzol, sulphuric acid and nitric acid, the company sold its aniline at a price less than half the prevailing market price of aniline during 1915.

This production of aniline, supplemented by that of a few other plants, has supplied the American market to a fairly comfortable extent.

The Benzol Products Co.'s aniline has been distributed, by preference, to those consumers who employ, directly or indirectly, the greatest number of people. The important fact is that in 1916 a supply of aniline equal to the former American consumption will be available at fair prices, and that this supply is not coming from mysterious nor untried sources.

Benzol Supply.—Since 1900 the production of benzol has steadily increased in the United States, so that there was enough benzol at all times for the manufacture of dyes if the industry had been established by the assistance of the Federal Government and by the sustained support of the American textile manufacturers. Not only were both these lacking, but the textile manufacturers persistently favored the English and German producers in preference to any American manufacturers.

Benzol supply is only one factor, and alone it is not

sufficient to justify the very heavy investments required to establish an American coal-products industry.

In 1915 several steel companies operating by-product coke ovens installed benzol recovery plants, so that a heavy production of American benzol is assured. When the war ends the output from these plants will be so abundant that it may become available as motor fuel for automobiles. In this service one gallon of motor benzol gives 15 per cent. greater mileage than does one gallon of gasoline.

Acids and Alkalies the Foundation of Coal Products Industry.—Under the abnormal conditions and inflated prices caused by the war, many small plants sprung up and have produced products derived from coal at a profit. At the end of the war these plants will fall like autumn leaves. A few will struggle on and consume their war profits in hopeless endeavor to establish permanent business. Only those built on a firm economic basis will survive.

The manufacture of products derived from coal is not an industry by itself. It is founded upon and is an extension of the manufacture of mineral acids and alkalies, and was created as a means of making a wider market for those acids—sulphuric, nitric, hydrochloric, acetic, for chlorine and the like, and a market for the alkali products, soda ash and caustic soda. For this reason a permanent coal products chemical industry cannot be created in America except by co-operation with or extension of the American acid and alkali manufacturing companies.

The Value of Experience.—In 1915, with prices ten to fifteen times normal, it was possible to manufacture some coal products with large profit in the United States. With the return to normal conditions we must conduct our processes with keenest attention to the most scientific methods, because losses of 1 or 2 per cent. in the steps of manufacture mean bankruptcy.

Proof that Americans sadly lack this scientific detail was given in 1915 by the many serious accidents, fires and explosions in plants manufacturing these products, the cause of which was faulty engineering design, inexperienced superintendence, untidy plant housekeeping and careless workmen.

With unconscious humor we have done homage to German efficiency by ascribing these accidents to the German diplomatic service.

To illustrate the necessity of attention to detail, take synthetic manufacture of carbolic acid. This process, starting from pure benzol, involves five chemical reactions and from 10 to 15 chemical operations, if all by-products be recovered. If an avoidable loss so small as 1 or 2 per cent. be permitted in each of these steps, the final yield of carbolic acid would be so low that the process might be a commercial failure. Yet carbolic acid is one of the most simple products to manufacture. Many others involve more steps, or steps in which the lack of technical skill produces larger loss. For example, a certain product with a normal price of 30 cents per pound has a possible maximum yield of 100 units attainable by extreme care in manufacture. With moderate care the yield drops to 88 per cent., and with ordinary care the yield drops to 75 per cent. Expressed in dollars and cents the result per ton is:

Possible yield 100 per cent., 2000 pounds at 30 cents, \$600 per ton.

Usual yield 88 per cent., 1760 pounds at 30 cents, \$528 per ton.

Common yield 75 per cent., 1500 pounds at 30 cents, \$450 per ton.

Loss at 88 per cent., \$72 per ton.

Loss at 75 per cent., \$150 per ton.

Nationalization of the Industry.—Approach to 100 per cent. technical efficiency is not the only requisite for commercial success. The intricate processes yield numerous by-products. Some are acids and alkalies which must be recovered and returned for use in the process. Others are salts or coal products which must be refined and sold. For many of these no market exists in the United States.

A network of markets must be created for every one of these by-products, either in the United States, in South America, Asia or Europe, if our American coal-products industry is to grow with the world and pay reasonable dividends on the investment.

It is not sufficient that American consumers acquire the habit of buying chemicals "made in the United States." Our chemical industry, to endure, must cover

*From a paper on "The Development in the United States of Manufacture of Products Derived from Coal," read before the annual meeting of the American Institute of Chemical Engineers at Baltimore, Md., January 12, 1916.

the world's market; indeed, its ultimate success may depend upon an American merchant marine.

The German system of nationalized industry handles this multitude of by-products with military precision, by fitting each one into the particular technical and commercial chink best suited to it, so that all by-products are marketed at or above cost. This permits the main product to be sold at a profit large enough to sustain the normal growth of the plant and to develop new products without adding new capital, and in addition, to pay 10 to 25 per cent. dividends.

In complete contrast it has been, and is, the policy of our Federal Government to forbid any such interlocking national co-operation.

National Defense.—The coal products chemical industry is vital to national defense. One source of the extraordinary military strength of Germany is her ability to manufacture ammunition, literally from the air and earth, in unlimited quantity.

This ability was created by the chemical company, which built huge works and trained an industrial army of men with the scientific knowledge and technical skill necessary to transform the nitrogen of the air, and certain ones of the coal products, into ammunition. The fundamental reason for the support which the Imperial Government gave to the coal-products industry was that Germany should develop a supply of ammunition adequate for national defense and world conquest.

While developing home resources, the German industry bought benzol, carbolic acid and other crude coal products from England, thus absorbing England's commercial and military strength. Meanwhile we were more backward than England, for we were so quick to grasp the red-hot opportunity presented by German dyes and pharmaceuticals at low prices that we did not even take the trouble to produce enough crude products to export.

Ammunition cannot be manufactured in sufficient quantity during the interchange of diplomatic notes prior to war; it must be manufactured and stored long in advance of hostilities. One main national defense is that great coal products chemical plants be established and operated steadily at commercial profit during peace, so that they will be instantly available to produce unlimited ammunition during war.

In 1915 we built many ammunition plants in the United States, every one on an artificial basis. Few of them can make a profit at peace prices. **Unless the United States establishes a complete and profitable national coal-products industry on a basis to keep abreast with all scientific progress, our program of "national preparedness" will descend to the plane of comic opera.**

Nitric acid from the air is one step in such scientific progress. Our supply of nitric acid comes now from nitrate of soda imported from Chile. After the war, if the importations are not obstructed, we will receive nitrates and nitrogenous products manufactured in Norway and Germany by fixation of atmospheric nitrogen. Part of these products will be for fertilizer, part for explosives.

Exhaustion of the nitrate of soda mines in Chile will ultimately make the United States wholly dependent upon this European supply, **unless we manufacture our own nitrates and nitric acid from the air.**

The potash situation is a parallel condition. With German potash cut off, we have no potash. Various American sources will be brought into operation, but several years must elapse before we produce all the potash we consume.

Fixation of atmospheric nitrogen as nitric acid will also require several years, even though the Federal Government give the manufacture its strongest support.

Nitric acid is the effective end of every explosive, and is the first chemical reagent used in the manufacture of aniline, and thence of indigo and others of the most important coal products and dyes. Without nitric acid our entire navy, army and coast defense becomes helpless the instant the stock of ammunition is exhausted.

Our entire investment in national preparedness will be wasted money if it does not include the manufacture of nitric acid from the air on a scale to render us absolutely independent of foreign nitrates.

Tariff.—A reasonable tariff, if formulated upon rational lines, will be of much value in supporting our coal products manufacture. Such a tariff would divide

these products into three classes, according to their degree of advancement in manufacture, and would levy duties proportionate to this degree. The classes would be: 1st. Crude products. 2d. Intermediates. 3d. Dyes, pharmaceuticals and highly-refined products. The duties should be, on crudes, 10 per cent. ad valorem; intermediates, 20 per cent. ad valorem, and dyes, 30 per cent. ad valorem.

If a specific duty be included it should be at the rate of $3\frac{1}{4}$ cents per pound on the intermediate class and $7\frac{1}{2}$ cents per pound upon dyes and pharmaceuticals. There should be no specific duty on crude products.

The free list should include coal tar, coal-tar pitch, creosote oil and mineral acids. Natural indigo and other natural dyes of vegetable or animal origin should be placed with synthetic dyes in class three.

Class 1—crude products—should comprise a small list. It should be described as all crude products of coal produced through destructive distillation of coal, or otherwise, and not refined by more than one distillation, nor refined by any process other than distillation, nor refined nor produced by synthesis, such products being crude light oils, benzol, toluol, xylol, cumol and naphthalin, crude tar acids containing less than 30 per cent. pure tar acids; and all other products from coal not otherwise specially provided for, and not medicinal and not colors or dyes, the duty to be 10 per cent. ad valorem.

The second, or intermediate class, should include all products manufactured from those of the crude products class, and all so-called intermediates, not colors nor dyes nor pharmaceuticals nor medicinal products, such products being phenol, cresol, aniline, anthracene, etc.; duty 20 per cent. ad valorem and $3\frac{1}{4}$ cents per pound specific.

The third class should include all colors or dyes derived from coal, including indigo, natural and synthetic, and alizarine, dry or suspended in water, and dyes obtained from indigo or alizarine, and all products derived from coal which are used for pharmaceutical or medicinal purposes, or other purposes; duty 30 per cent. ad valorem and $7\frac{1}{2}$ cents per pound specific.

Natural indigo and all dyes, pharmaceuticals and medicines and all other products derived from natural sources of vegetable or animal origin, and which are used interchangeably with similar products derived from coal, should be included in class three.

Anti-dumping Clause.—There should be an anti-dumping clause to prevent unfair competition instituted for the purpose of destroying American industry. A dumping clause must be drafted with utmost care and its working tactfully handled. If it be too drastic, or if handled without good judgment, it will become worthless, or worse, because foreign countries, in retaliation, will inflict the anti-dumping penalty upon any American manufacturer who may sell his goods in those countries at lower prices than in the United States. We cannot afford to take any chances with American industry now, when our export trade in manufactures is becoming better established than ever before in our commercial history.

Compulsory working of patents in theory looks attractive. In practice there has been nothing in the history of the coal-products industry which could have been changed or improved by it to the slightest degree. Compulsory working of patents has been tried in England, France and Russia as recently as 1907, and proved a total failure in those countries.

As stated by the German authority, Prof. Otto N. Witt, "the success of a coal-tar dye factory is no longer dependent upon the careful guarding of factory secrets as in the past, but upon a systematically arranged plant and the proper distribution therein of the work to be performed, and above all, upon skillful commercial management, both within and without the factory."

Lack of technical common school education is a further disadvantage from which we suffer. Our system of early nineteenth century education includes no technical or trade schools by which in Germany the entire population is perfected in twentieth century methods for earning their living in twentieth century industries. In consequence American labor does not give effective attention to its job, and it is extremely difficult to secure labor in the United States which will give competent attention to the delicate chemical manufacturing operations of the coal-products industry.

In summary, the essentials for creation in the United States of a complete industry in the manu-

facture of products derived from coal are: Co-operation of the American acid and alkali manufacturers with the coal-products industry; co-operation of the American consumers with American producers through long-term contracts to assure us the American market; establishment of the industry on a peace scale big enough to make it a fundamental factor in national defense; establishment on a profitable commercial basis of the manufacture of nitric acid by fixation of atmospheric nitrogen; nationalization, or rather internationalization of the industry to insure a balanced world market for all by-products; development of a system of twentieth century common school and technical education, and finally, maintenance of a rational tariff.

That a larger coal-products industry will be established in the United States is certain. The degree to which it attains perfection will be in proportion to the extent with which these requirements for its profitable operation are provided.

Vast Volume of Domestic and Foreign Trade.

New York, January 18—[Special.]—Estimates of the total trade of the United States in 1915 place it at more than \$500,000,000,000. The foreign trade, which eclipsed all former records, aggregated \$5,350,000,000. This, while unprecedented in volume, was, as the foregoing figures show, barely 1 per cent. of the nation's total trade.

While trade with foreign nations increased over \$1,500,000,000 during the year, the increase in domestic trade exceeded \$50,000,000,000, equivalent to 10 times the combined total of exports and imports.

Manufacturers are gratified at the showing of increases in domestic trade. It augurs well, they hold, for the soundness of our present prosperity, and is sufficient answer to those who hold that the European conflict is the sole cause of current good trade conditions throughout the country.

The National City Bank, through its foreign trade department, has compiled figures showing that exports to South America in the six months ending with October last were \$82,000,000, against \$46,000,000 in 1914 and \$73,000,000 in the corresponding six months of 1913. Imports from South America for the same period were \$149,000,000 in 1915, against \$107,000,000 in 1914 and \$83,000,000 in 1913.

Argentina, Brazil, Chile, Peru and Venezuela show the largest gains in trade.

Diversified Agriculture South.

President Fairfax Harrison of the Southern Railway Co. says that the report of the United States Department of Agriculture on the acreage sown in winter wheat during the fall "is interesting chiefly because it shows a continuing tendency to diversified agriculture in the South. As compared with last year, Virginia, North Carolina, Georgia, Kentucky, Tennessee, Alabama and Mississippi all show increased areas sown to wheat. In South Carolina the area is the same as last year. These States as a whole show an aggregate increase over last year of 141,000 acres, or 2.92 per cent., while the States outside of the South show a net decrease of 4,907,000 acres, or 13.19 per cent. While the acreage sown is a slender basis on which to base an estimate of the final yield, so far as it goes it is favorable to the South as indicating a larger yield in our section at a time when a smaller yield in the United States as a whole will tend to advance the price."

Important Bank Election.

Tench F. Tilghman was recently elected president of the Citizens' Bank of Norfolk, Va., by a unanimous vote. He had been hitherto vice-president and cashier. William Leigh Williams has now been elected vice-president, and Norman Bell, Jr., cashier. Mr. Tilghman has been identified with the Citizens' Bank for 33 years. It is the oldest commercial bank in Norfolk, having been chartered in 1867. Its statement on January 1 shows total resources of \$4,479,502.53, the loans and discounts being \$3,456,543.92 and the cash \$518,579.40. The capital is \$600,000; surplus and undivided profits, \$573,207.53, and deposits, \$2,786,536.24.

Record Prices on Export Gasoline Direct Attention to South's Supply

[Special Correspondence Manufacturers Record.]

New York, January 18.

With both the Department of Justice and the Federal Trade Commission preparing to investigate gasoline prices, the Standard Oil Co. has put a record figure on gasoline intended for export.

The recent official announcement of an advance of one cent a gallon on export stove grade gasoline and two cents a gallon on other grades broke all previous records for high prices.

But there is every indication that these prices will not remain as the highest known long. The prices may go higher soon, unless supply comes nearer to demand. And this is unlikely to be the case for some time, unless the Southern States increase their production of petroleum.

Last year the Southern States of Oklahoma, Texas, Louisiana, West Virginia and Kentucky produced over 50 per cent. of the marketed petroleum output of the United States.

With the 25 per cent. increase in gasoline consumption this year the demand is ahead of supply, and automobile owners of New York, nearly 300,000 strong, are actively interested in seeing Southern oil fields increase their output.

In local garages the retail price varies from 26 to 28 cents per gallon, with upward tendencies, in line with the advances upon exports and the known inability of Eastern refiners to supply the demand. A retail price of 30 cents per gallon before the close of January is the prediction of many retailers.

Unofficial explanations by Standard Oil men of the high prices put upon export gasoline cite the enhanced cost of crude oil and the great increase in the use of gasoline as the main factors. The price of Oklahoma crude oil has jumped in 11 months from 40 cents per barrel to \$1.20, while crude oil of Pennsylvania grade has advanced from the low of \$1.35 per barrel to \$2.15 per barrel, with general belief that soon the price will cross \$2.50 a barrel, the high record prior to the exploitation of the Cushing field in Oklahoma.

Export prices in case lots, each case containing 9 1/2 gallons, are now at these top figures:

Stove grade, 10-case lots, now 27.50 cents per gallon; up 1 cent.

Stove grade, 10,000-case lots, now 26.51 cents per gallon; up 1 cent.

Benzine, 1000-case lots, now 26.35 cents per gallon; up 2 cents.

Benzine, 10,000-case lots, now 26.26 cents per gallon; up 2 cents.

Naphtha, 68 to 72 Baume, 500-case lots, now 30.30 cents per gallon; up 2 cents.

Naphtha, 68 to 72 Baume, 1000-case lots, now 30.10 cents per gallon; up 2 cents.

The current demand for gasoline is so great that the refiners cannot store any, and the supply in storage is dwindling. A storage reserve increase of around 50,000,000 barrels of crude petroleum includes about 24,000,000 barrels brought to the surface last year. It makes the largest known crude stocks, but it does not relieve the present hiatus between the demand for gasoline and the available supply.

The estimated consumption of gasoline in the United States in 1916 is 30,000,000 barrels of 42 gallons each. This compares with a consumption of 20,000,000 barrels in 1914 and about 25,000,000 barrels last year.

In 1900 the total consumption of gasoline in this country was 5,000,000 barrels. It had doubled by 1910, when for the first time consumption crossed the 10,000,000-barrel mark, and it has been steadily increasing since along with the marvelous growth of the automobile industry.

Because of the current lack of adequate transportation facilities from important producing centers due to the closing of the Panama Canal and railroad embargoes, the shortage of supply in New York may permit sensational prices. It may be three or four months before New Yorkers get gasoline under 25 cents, and

they may be compelled to pay as high as 35 cents per gallon for motor fuel.

In the 12 months of the calendar year of 1915 automobiles in this country consumed about 13,000,000 barrels of gasoline. This was 3,000,000 barrels more than the consumption of autos in 1914.

This calendar year, with an expected increase of 1,000,000 more autos to be distributed to purchasers, there will be an increased demand for gasoline of approximately 3,000,000 barrels more than last year. The amount of lubricating oil consumed will also increase largely over the 20,000,000 gallons used last year.

Oil from the California field, debarred from using the Panama Canal, must pay transcontinental gasoline rail freight rates and encounter delays in reaching the East.

Nearly all the oil produced in Mexico available for shipment at Gulf ports is going to England. So great is the need of the British Government for it that tank steamers have been especially requisitioned by the allied governments to transport it.

Because of the war conditions, which prevent full production of petroleum in Galicia, Roumania, Russia and India, the export demand for oils from the United States is expected to continue strong. Prices to domestic users will be in line with the world demand.

The United States will be called upon this calendar year to supply at least 70 per cent. of the world's petroleum in its various forms, and nearly, if not fully, two-thirds of this must come from the oil fields of the South.

SOUTHERN SECURITIES HIGHLY RE-GARDED.

Cincinnati Bond Houses Point Out Their Attractions—Some Defects Discussed.

Cincinnati, O., January 12—[Special].—As the Cincinnati bond market handles a number of Southern securities—particularly State, county and municipal negotiable paper—the talk I had with several of the bond people should be of interest to Southern people generally.

As to the number and amount of Southern bonds that were negotiated and distributed by the Cincinnati market in 1915, brokers I have talked with declare it is impossible to get any reliable data. No one puts the average annual dealings in Southern securities here at less than \$20,000,000, and the estimate for last year's business was as high at \$60,000,000, in the opinion of one man I met.

I asked, "How do Northern buyers—particularly those in the Cincinnati territory—regard Southern bonds as an investment?"

To a man all agreed that, as a rule, Southern bonds are "good buys." First, they are desirable because the interest paid is a trifle higher than that obtainable in investing communities, the South being on a borrowing basis. Second, they are stable and secure. Third, their interest and principal are paid promptly. Fourth, they are good because Southern communities, due to their conservatism, are rarely overbonded, and their protective features are good.

Bond laws in the South were next discussed. The Southern States generally, the bond men agreed, have good laws that are designed to protect both the investor and the communities issuing the bonds. Some defects were cited, however, with the view of airing them, so that they may be remedied. Road bonds, for instance, were discussed. All strongly urged against the issuance of long-term road bonds—that is, 15 or 20-year bonds. The largest investing institutions are no longer purchasing long-term road bonds. They argue that the life of the indebtedness far outlives that of the improvement. Serial bonds are considered more desirable, because the indebtedness automatically reduces itself each year.

The most attractive bonds to the investor, I was told,

are those payable from an unlimited or specific tax. This means that coincidentally with the issuance of the bond provision is made for the levy and collection of such a tax to pay the interest and the principal at maturity.

Long-term bonds issued with an early optional period are also undesirable.

Aside from the men I met in a "shop talk" conference, I have called and talked with the representatives of the following-named bond houses while in Cincinnati: Seasongood & Mayer, Fifth-Third National Bank, Field, Richards & Co., Breed, Elliott & Harrison, J. C. Mayer & Co., Western German Bank, Davies-Bertram Company and R. Kleybolthe & Co. While this does not complete the list of houses doing business in the South, as I did not have the opportunity of calling on them all, it does represent a number of the leading institutions.

All of these concerns are optimistic. They say that bonds generally are bringing good prices these days, and that every good offer is taken up and disposed of with clock-work regularity. They are therefore suggesting to such communities as contemplate an issuance of bonds that they issue them at once, because they can now sell them to the best advantage. All of these firms either buy Southern securities outright or handle them for the ultimate consumer. They, as a rule, do the major part of their bond-buying in the South.

Roy G. Booker.

MOBILIZATION OF MUNITION INDUS-TRIES.

Systematic Survey to Show Peril of Nation's Dependence on Present Ore Supplies and Location of Plants.

New York, January 18—[Special].—The announcement to the National Democratic Club by W. L. Saunders, president of the American Institute of Mining Engineers, that 36,000 technical experts were actually at work classifying and enumerating the factories and plants in the United States capable of making war munitions or supplies was received in the financial district with marked approval.

Prompt official confirmation from Washington and elaborations of his statement by members of the cabinet gave further satisfaction.

Mr. Saunders' statement that the work of national registration actually had begun, as supplemented by that of Secretary of the Navy Daniels, showing that every State is to be canvassed in a systematic way, give positive assurance that mobilization of American industries will be thoroughly done. Wall Street financiers believe that better results will be secured through the efforts of the volunteer scientific bodies than perhaps through any other plan.

By this method all considerations of a political character can be eliminated, and a long step made toward necessary preparedness.

While it is true that New York capitalists have great interests invested in steel plants and munition factories in the Atlantic Coast belt where the bulk of the munitions is made, they are awake to the danger of the situation as presented by the MANUFACTURERS RECORD. It is to be expected, they say, that after 36,000 scientific men have taken part in a mobilization of national industries, they will be able to impress the country with the importance of securing a source of supply of iron ore which cannot be captured by an alien force.

To join all industries in the aid of national defense and then to leave the door open for the enemy to enter, it is set forth, would be an act of folly which even the pacifists would condemn. As set forth by the MANUFACTURERS RECORD's editorials, the plea for munition plants in the South to utilize the iron ore, raw materials and other resources of that section in peace or war will receive strong endorsement in the actual mobilization of munition industries.

The systematic tabulation State by State is expected to disclose the strategic weakness in the location of the majority of munition factories near the Atlantic seaboard and the peril to the nation in their entire dependence upon a supply of iron ore which could be cut off entirely in time of war.

Building Activities at Roanoke

[Special Correspondence Manufacturers Record.]

Roanoke, January 15.

Roanoke, now in its thirty-first year, is building itself a municipal home that will serve as a striking example of its stability, progressiveness and prosperity. The new city hall is modern and pretentious, and will cost \$250,000 before it is completed. It is an example of the buildings that are being erected in the Roanoke of today.

The new city hall is to be dedicated for the public use during the coming spring. It is five stories high, three of them to be used for the housing of the city government and the two top floors are for the jail. It is constructed of brick, concrete, tile, marble and terra-cotta. It is 60x220 feet, and is being constructed by the King Lumber Co. of Charlottesville, Va., from plans prepared by Messrs. Frye & Chesterman, architects of Roanoke. This is the sort of building that the city of Roanoke is doing to establish a precedent that will encourage similar substantial construction.

The owners of the Hotel Roanoke are planning to begin work at once on a proposed new addition to the hotel, which will cost about \$200,000. A four-story wing will be added; a new banquet hall; a large private dining-room and enlargements and the remodeling of the lobby are among the improvements that are planned. This will mean that 70 new rooms, 38 of which will have baths, will be made possible through the new plans, which were drawn by Messrs. Frye & Chesterman of Roanoke, and the contract for which has been let to John P. Pettijohn & Son of Lynchburg, Va.

From the plans prepared by H. M. Miller, a Roanoke architect, the Yost-Huff Building is being constructed now. It is 50 feet wide by 200 feet long, and it rises three stories above the ground. It will represent an expenditure of \$25,000 when completed.

The Hammond Building, the new home of Hammond's Printing and Lithographing Works, has just been completed at a cost of \$45,000. It is of reinforced concrete, fireproof construction, two stories above ground, 50x90 feet, and contains 21,600 square feet of floor space. C. H. Hinnard, architect; A. L. Marshall, contractor, both of Roanoke.

C. H. Hinnant is now preparing plans for an edifice for the congregation of the West End Presbyterian Church, which will cost \$15,000.

The City Auditorium is another public building that Roanoke is particularly proud of. It will be completed in May at a cost of \$50,000; is being constructed of fireproof materials; contains two stories and a basement; is 100x200 feet in size, and will have a seating capacity of 3300 people. H. M. Miller drew the plans and C. H. Turner has the construction contract.

Other notable building activities and the cost of them during the last 14 months are as follows: An addition to the Ponce De Leon Hotel, \$70,000; a negro church, \$24,000; the Belmont Baptist Church, \$20,000; stores on Campbell avenue, \$15,000; stores on Jefferson street, \$19,000; a Y. M. C. A. building, \$125,000; an apartment-house, \$24,000; shop extension of Norfolk & Southern Railroad, \$70,000; city incinerating plant, \$42,000; annex to Green Memorial M. E. Church, \$43,000; building for the Thurman & Boone and Heironimus Company, \$135,000; residences of Dr. J. T. Strickland and S. D. Ferguson, \$60,000; the Clayton building, \$10,000, and many other smaller and important items, all of which when totaled mount into figures of considerable size.

The moving of the Elizabeth College from Charlotte, N. C., and combining it with the long-established Roanoke Woman's College, which move was made this year, adds to Roanoke's fame as an educational center. To take care of the increased enrollment the new administration building is now being completed. The other two educational institutions are Virginia College for women, under the auspices of the Episcopal Church South, and Hollins Institute, located at Hollins, seven miles from here.

Roy G. BOOKER.



ROANOKE AUDITORIUM-ARMORY, ROANOKE VA. NOW UNDER CONSTRUCTION.



ELIZABETH COLLEGE—FORMERLY ROANOKE WOMAN'S COLLEGE (LUTHERAN)—ROANOKE, VA.



NEW Y. M. C. A. BUILDING, ROANOKE, VA., RECENTLY OPENED.

Tremendous Possibilities in the Utilization of Wastes from Long-Leaf Yellow Pine*

By DR. A. D. LITTLE of Boston, Mass.

[“When this waste is intelligently considered, not as waste, but as raw material, it will be seen to afford the basis for building up the greatest group of co-related by-product industries the world has ever seen.

“Upon an annual cut of 15,000,000,000 feet of yellow pine the lumber industry in our Southern States now wastes raw material sufficient for the concurrent yearly production of 40,000 tons of paper, 3000 tons of rosin, 300,000 gallons of turpentine and 600,000 gallons of ethyl alcohol, together with fuel sufficient to meet the requirements of all of these industries.”

These statements by Dr. Little carry a message of greatest importance to the yellow pine industry of the South. Coming from a man who occupies a position of commanding importance in the field of chemical engineering and research work in the country, these facts presented merit the earnest study of the lumbermen of the South.

Editor Manufacturers Record.]

On a total annual cut of 50,000,000,000 feet, board measure, of merchantable lumber, at least 75,000,000,000 feet, or about 112,000,000 tons, of wood waste is produced. For every man, woman and child in the country there is, therefore, annually wasted more than a ton of wood.

The proportion of waste to merchantable lumber varies within wide limits with the kind of wood. In the lumbering of hardwoods, according to Goodman, only 15 per cent. of the height of the standing timber appears as finished lumber. Sixty-five to 70 per cent. of the original tree is left on the ground, and the mill waste amounts to over a cord per 1000 feet of lumber. Frankforter, who had exceptional opportunities for studying the lumber industry in the Middle, Northern and Western States, reports that in these sections of the country the best equipped and most skillfully operated mills utilize a little less than 40 per cent. of the total weight of wood in lumber, lath and shingles. Our own large scale studies on long-leaf yellow pine have proved that under the best operating conditions only 33.42 per cent. of the average tree becomes available as lumber, box shooks, lath and shingles. Two-thirds is wasted. In the estimate given above of total annual waste an average of 60 per cent. of the entire tree was reckoned as waste, but in view of the loss on yellow pine, which is our most important timber tree, and the far greater proportionate loss on hardwoods, it is evident that the total annual waste is substantially more than 75,000,000,000 feet, and may even reach 90,000,000,000 feet. Frankforter's estimate of 100,000,000,000 feet on a smaller annual output is undoubtedly too high, and not in accordance with his other figures.

Of all our timber trees, none lends itself more readily to waste utilization than long-leaf yellow pine. It is cut more largely than any other species, and the individual operations are commonly on a great scale, which ensures the local concentration of waste in vast amounts. For these reasons, and because my associates and I have studied the waste utilization problems presented by this wood more carefully than those of any other species, I will ignore hardwood distillation, the use of extracted chestnut chips for pulp and paper-making and the occasional use of mill waste from Northern conifers in sulphite mills, and ask you to direct your attention solely to the utilization of wood waste from long-leaf yellow pine.

The present annual cut of this species is about 15,000,000,000 feet, board measure. The waste is equivalent to 30,000,000,000 feet. It may be said at once, without fear of successful contradiction, that the potential profits in this waste are far greater than any actual profits which this branch of the lumber industry can be made to yield from lumber.

When this waste is intelligently considered, not as waste, but as raw material, it will be seen to afford the basis for building up the greatest group of co-related by-product industries the world has ever seen. The products of these industries will comprise wood pulp, pulp boards, paper, paper bags, paper twine, turpentine, rosin, pine oil, charcoal, tar, ethyl alcohol, cattle feed varnishes, ether, and

not improbably acetic acid, wood alcohol, acetone and producer gas.

The wood of long-leaf pine is heavy, exceedingly hard, very strong, tough, coarse-grained, compact, durable and very resinous. Its density varies with the height from the ground, the age of the tree and its content of pitch or oleoresin. Sargent gives the average Sp. Gr. as about 0.7, which seems to be too high. Determinations in the Forest Products Laboratory ranged from 0.426 to 0.583. Determinations in our own laboratory gave 0.626 as the Sp. Gr. of round wood averaging seven inches in diameter. The weight per cubic foot for logging waste we found to be 39.1 pounds bone dry. The weight per cord depends greatly upon the shape and size of the pieces. On the dry basis we have found the sawdust to weigh about 1400 pounds, mill waste with little or no bark 2340 pounds, with much bark 1708 pounds, logging waste in the form of fairly smooth round logs weighs about 3260 pounds, and if rough and irregular will average 1860 pounds, while mature long-leaf pine, consisting largely of heart wood, will run about 4300 pounds to the cord, bone dry.

We find the ultimate composition of long-leaf pine to be: Carbon, 53.96 per cent.; hydrogen, 7.13 per cent.; oxygen, 38.65 per cent.; nitrogen, 0.03 per cent.; sulphur, 0.04 per cent.; ash, 0.16 per cent.; total, 100 per cent.

Our determinations of fuel value of average saw-mill dust gave 9240 B. T. U., dry basis. Moisture in green wood averages 34.15 per cent., fresh green stumps average 28.69 per cent., lightwood 13.55 per cent. Stumps about six years old carry around 20 per cent. of water and kiln-dried lumber contains an average of about 10 per cent.

The proportion of bark varies to some extent with the age of the tree, and is relatively high. Small round Mississippi wood had about 9 per cent., Florida pulpwood over 11 per cent. and Florida trees 18 inches diameter, bore 8.6 per cent. of bark by weight.

Determinations in our laboratory of the fiber length of long-leaf pine gave a maximum of 7.40 mm., minimum 3.00 mm., with an average of 4.60 mm., as compared with 3 to 3.5 mm. for spruce.

In determining the amount of field waste under careful operation members of our organization selected five plots of one acre each as truly representative as possible of the average quality of yellow-pine timber. As soon as the timber had been felled the waste between 3 inches and 9 inches was collected, classified and weighed. Much of it was also corded and scaled to determine relations between weight, cord measure and volume. Each stump was measured and its volume and weight computed. Needles from four trees were weighed.

The main points of accumulation of mill waste are the main refuse conveyor and the main dust conveyor. Actual determinations by weight of the amounts of waste carried by these conveyors in very large scale operations were made by members of our staff. The results of these determinations in the field and at the mill enable us to state with a very close approximation to the truth the relative proportions of the initial products of the average yellow-pine tree. They have perhaps never been ascertained before within such limits of accuracy or upon so large a scale. The proportions of the several products are as follows: Tops

and culls, 22.35 per cent.; logs, 70.56 per cent.; stumps and lightwood, 7.09 per cent.; total, 100 per cent.

Bearing in mind that all percentages given are on the total weight of the tree, the tops and culls consist of: Needles and twigs, 2.25 per cent.; limbs under 3 inches, 2.54 per cent.; cordwood, 6.42 per cent.; pulpwood, 4.54 per cent.; red and rotten, 6.60 per cent.

The logs yield: Red and rotten, 11.45 per cent.; slabs, edgings and trimmings, 18.07 per cent.; sawdust and shavings, 1.62 per cent.; shingles, 0.06 per cent.; lath, 1.39 per cent.; lumber and box shooks, 31.97 per cent.; stumps amount to 6.48 per cent., and lightwood to 0.61 per cent.; total, 100 per cent.

Comprehensive studies were conducted on these wastes for a period of eight months. The different classes of waste were carefully and repeatedly analyzed and their content of rosin and turpentine determined. Papers in great variety were made in our experimental paper mill under direction of Mr. V. E. Nunez, and extractions and distillations on the small commercial scale carried out in our forest products department by Dr. L. F. Hawley. The results obtained, together with data from actual commercial practice, point incontestably to these stupendous totals:

Upon an annual cut of 15,000,000,000 feet of yellow pine the lumber industry in our Southern States now wastes raw material sufficient for the concurrent daily production of 40,000 tons of paper, 3000 tons of rosin, 300,000 gallons of turpentine and 600,000 gallons of ethyl alcohol, together with fuel sufficient to meet the requirements of all these industries.

Despite the prevailing opinion to the contrary among lumbermen, and even among papermakers, long-leaf yellow pine lends itself admirably to the manufacture of paper. It is too pitchy for the sulphite process, but is readily reduced to pulp by the soda process. Much the best results are, however, obtained by the sulphite process, which, when carried out under proper conditions, yields an excellent kraft pulp and paper. The pulp bleaches with some difficulty, but may with care be brought to good color without serious impairment of strength. The bleached pulp makes good wood writings, and when mixed with pulp from gumwood can be run off into good book papers. A cord and a half of round waste makes a ton of paper, as against about two cords of spruce, costing Northern mills, from \$9 to \$13 a cord.

The production of ethyl alcohol from yellow-pine waste by the Ewen & Tomlinson process has been fully demonstrated as a technical proposition, about 90,000 gallons of high-grade 90 per cent. alcohol having been made in the plant of the Standard Alcohol Co. at Fullerton, La. The commercial merit of the proposition remains to be demonstrated, since this company is now in the hands of the receiver for reasons altogether apart from the technical merit of the process. It may, however, be said that every technical man familiar with the process believes that it is capable of producing 95 per cent. alcohol at a cost, including cooperage and all fixed and manufacturing charges, of not more than 20 cents a gallon. Such alcohol is worth today about 50 cents a gallon. The yield per cord of sawdust or hogged wood waste, containing 50 per cent. water, is 10 gallons in large scale operation, but yields much higher have been obtained in the laboratory.

The process is based, of course, on the observation of Braconnot in 1819 that cellulose by treatment with mineral acid is converted into reducing and fermentable sugars. For nearly 100 years experimenters have endeavored to develop this observation into a commercial process. With the exception of Ewen and Tomlinson, all have failed to produce alcohol in commercial quantities. It remained for Ewen and Tomlinson to overcome the fundamental technical difficulties underlying all these previous attempts and to put forward the first process capable of large-scale production of ethyl alcohol from wood.

The Ewen and Tomlinson process is essentially one for producing fermentable sugars. The fermentation of these sugars, once produced, may be carried out and the alcohol recovered in any distillery by the usual methods. It is my belief that the process affords the cheapest known method for producing these sugars, and that it therefore is ultimately destined to become an important, if not the most important, source of industrial alcohol.

In carrying out the process hogged wood waste, usually containing about 50 per cent. of water, is loaded

*From a paper read before the annual meeting of the American Institute of Chemical Engineers at Baltimore, Md., January 12, 1916.

into a rotary digester holding about seven cords and having a protective and heat insulating lining. Sulphuric acid in relatively small amount is sprayed upon the wood, and then steam is admitted to the digester. The critical temperature is reached as quickly as possible, and the reaction is then extremely rapid, if not, indeed, nearly instantaneous. Pains are therefore taken to immediately reduce the pressure and to empty the digester of its contents as promptly as may be. About 25 per cent. of the weight of the wood is converted to reducing sugars, not all of which are fermentable.

The cooked material, which is not unlike coarse coffee grounds in appearance, is transferred by conveyors to a diffusion battery or other extraction apparatus in which the sugars are dissolved out. The spent chips go to a continuous press for removal of excess water, and are then available as food. The extracted juice is neutralized with lime, and is then ready for fermentation. The concentrated slop from the stills finds use as cattle feed, and is about equivalent to molasses for that purpose.

In a modification patented by me the process may be diverted as a whole to the production of carbohydrate cattle feed. In this modification hydrochloric acid is substituted for sulphuric and subsequently removed so far as readily possible by heating or blowing air through the mass. The remaining acid is then converted to common salt by addition of an equivalent amount of sodium carbonate. The juice is extracted and concentrated to the consistency of molasses.

A major economic problem in the South which is bound up with the utilization of wood waste is that of the agricultural development of the cut-over lands. It has been demonstrated that by a steam puller yellow pine stumps may be pulled for about 33 cents each. In the trials made the stumps averaged 563 pounds each, which makes the cost of pulling \$1.16 per ton. Where logging train roads are still in place, the stumps can be brought to a central plant for treatment at a total cost well within \$2.50 per cord. Treated by solvent extraction, they should yield per cord about 6 gallons of turpentine, 2½ gallons of pine oil and 380 pounds of resin. The extracted chips, as pointed out by Veitch and Merrill and amply demonstrated in our experimental paper mill, are available for the manufacture of an excellent grade of kraft paper. Strangely enough, and contrary to our first impression, the charred portions common in such stumps are easily removed in the process, and leave the paper clean.

Stumps and highly resinous wood residues, termed lightwood, together with the box slabs from turpentined trees, are directly available for treatment by several processes of distillation. The average green wood, with 35 per cent. moisture, contains about 6 per cent. resin, but in selected samples of wood the resin may run higher than 50 per cent. No large quantities are usually to be had, however, containing more than 30 per cent. The composition of the resin itself is variable, but in green wood it runs about 80 per cent. resin and 20 per cent. volatile oils; about 30 per cent. of the latter are turpentine and the balance pine oil.

Destructive distillation is carried on in retorts operated commonly without temperature control. Average yields under these conditions are, light oils, 6 gallons; turpentine, 6 gallons, heavy oil, 16 gallons; tar, 48 gallons; charcoal, 35 bushels.

Several methods have been proposed for the recovery of turpentine, pine oil and resin from yellow pine wastes by the action of water solutions of alkali, but none are thought to be operating commercially. They depend upon the fact that the wood is only slightly attacked by the dilute alkali in which the resin is readily soluble. Nevertheless, some wood is dissolved, and the difficulty of separating this so-called "humus" from the resin has prevented the introduction of processes of this type. The difficulty has been overcome in a simple and ingenious way by Whitaker and Bates, who salt out the resin soap by increasing, after the initial treatment of the wood, the concentration of the alkaline solution to 3½ per cent. alkali. The treated chips are then available as a raw material for paper making.

When the real work of wood waste utilization has once begun and the attention of chemical engineers and financial men has been drawn more generally to the huge potential values now ignorantly thrown away, we may expect the rapid development of these by-product industries and the initiation of many new ones to the great enrichment of the South and in somewhat less degree that of the Northwest. It would doubtless be too

sanguine to expect the directive impulse for this new development to come from the lumbermen themselves. They are too close to the wastes. They are blinded by the sawdust. But if they fail much longer to grasp the opportunity which has been so long beside them, they must be content to see others reap the benefits and profits which will come through control of processes, special apparatus, and, above all, of technique.

Interesting Results at By-Product Plant in Chattanooga.

Chattanooga, Tenn., January 14—[Special.]—From some standpoints the most interesting industry in Chattanooga is the Chattanooga Gas & Coal Products Company, which is making coke with the Roberts method and developing many of the by-products. While by-product coke ovens have been in use in this country for many years, the industry has been based on European practice, and has developed slowly, but the Chattanooga plant, by introduction of the Roberts type of ovens, an American invention, is notable as representing the newest and most advanced discovery along this line. This means, necessarily, a period when troubles arising from the application of new principles must be overcome. However, it is very gratifying to the company and to Chattanooga as a whole that the time is rapidly approaching when the hopes of the inventor and those who financed the project will be realized by the attainment of the expected results.

With the completion of the benzol plant, the gas and coal products company will be producing gas, tar, sulphate of ammonium, benzol, toluol, xylol and solvent naphtha.

The coal is received from cars into a pulverizer, which reduces it to powder, and goes thence on a long belt conveyor to the battery of Roberts ovens. When the coking is completed an immense battering ram, electrically operated, pushes it out of the oven into a steel car, which is then moved a short distance to the "quenching" station for cooling by water. It is then screened and loaded into cars for delivery. The gas goes from the ovens to the coolers and scrubbers, and thence into the by-product building, where the tar and ammonia are extracted and the sulphate of ammonium manufactured.

The present battery of ovens now handles about 250 tons of coal a day, and will probably be increased in the near future to 350 tons, and is now yielding about 2,250,000 cubic feet of gas daily. The part of this gas that is richest and highest in thermal units is treated for the removal of sulphur and other impurities and delivered to the Chattanooga Gas Company. The remainder is used to heat the ovens for production of more coke, gas, etc. The tar has been sold to the F. J. Lewis Manufacturing Co. for 10 years. Benzol, while used in the manufacture of dyes and paints, is also an excellent fuel for internal combustion engines, and will be treated for production of phenol. Toluol is used almost exclusively in the making of explosives, but may be converted into other compounds for a variety of highly useful purposes. The xylol and solvent naphtha have some use in dye manufacture, but their chief utility lies in the fact that they are solvents for rubber and are used very extensively in the manufacture of the various rubber products and novelties.

Not only is the industry a new one in the Chattanooga district, but it is the first instance of the Roberts ovens being installed anywhere. It has been in operation since July 1, 1915, and is rapidly approaching the stage when will be verified the claims of its superiority over the German and other processes of coke making. Not only the well known Durham coal, which has always made good coke, but the Soddy and other coals are used successfully, and this means much to the large coal field operators all around Chattanooga. One of the principal customers for the coke is the Chattanooga Iron & Coal Corporation, which went in blast a few weeks ago.

President Lewis T. Wolle, of the Chattanooga Gas & Coal Products Company, announced early in January that the benzol plant would be in operation before February 1.

The most recent development relative to the Chattanooga plant has been the decision to use the benzol obtained from the coke oven gas in the manufacture of synthetic phenol. To attain this end, the Chatta-

nooga Chemical Co. was organized and work has been begun on the \$150,000 plant of that allied concern. It is expected that the plant will be finished and turning out a ton and a half of phenol, the common name of which is carbolic acid, by April 1 next. The Chattanooga Gas & Coal Products Co. will sell its output of benzol to the new company, the plant of the latter being in close conjunction with the ovens. Plans of the chemical or phenol company have been so drawn that if desired the capacity can be increased 30 per cent. with comparatively little cost. It is understood that the phenol will be placed with the regular drug trade of the United States, so that the market will be stable and not dependent upon unusual conditions like the European war.

In connection with the organization of the Chattanooga Chemical Company, President Wolle of that company, as well as the gas and coal products company, announced the retaining of an eminent expert to be in charge. He is Dr. Harry McCormick, professor of applied chemistry in Armour Institute of Technology, Chicago, and a leading expert on synthetic phenol.

Previous to the discovery of a method for manufacturing phenol by a synthetic process this product was obtained from the distillation of tar.

Aside from the by-products mentioned, no official announcement has been made, but there is good reason to believe that eventually other chemicals, such as salicylic acid, will be prepared for the market. Also, it is understood, the addition of another battery of coke ovens has merely been postponed, and is considered so essential that it probably will follow close on the heels of completion of the various improvements now being made.

HAL F. WILTSE.

RECORD-BREAKING GAS WELL.

Great Strike in the New Corpus Christi-White Point Field.

Corpus Christi, Tex., January 14—[Special.]—Experts agree that the gas well brought in recently by the Guffey Petroleum Co. on its White Point lease, seven miles from Corpus Christi, is the greatest producer in the world, the flow being estimated at 30,000,000 cubic feet daily. It is the third big gasser that has been brought in on the White Point tract within the past 15 months, two being brought in by the Guffey company.

So terrific is the pressure that the drillers have made no effort to cap the flow, and will probably not make the attempt until the flow diminishes. So great is the roar of escaping gas that it is impossible to get nearer than 100 feet of the well. The gas was encountered at a depth of 2700 feet while the drillers were baling the well.

The fact that the casing has been set in cement for a distance of 2500 feet leads to the belief that the Guffey company will be able to save the well.

F. B. HARRISON.

\$1,050,000 Oil Engine Company's Plans.

An important addition planned for Baltimore's industrial interests is the plant of the Baltimore Oil Engine Co., recently incorporated with a capitalization of \$1,050,000. Alfred W. Gieske is president and Leon Wygodsky is vice-president and general manager, the latter having patented the system of internal combustion oil engines under which the company will manufacture. Engines of from 5 to 1000 horse-power and even larger will be constructed. Walter M. Gieske of Baltimore, architect, is preparing plans and specifications for the erection of a building for the company, this structure to be 200 feet long by 100 feet wide.

A \$650,000 Pulp Enterprise.

Plans are being formulated to manufacture paper pulp and eventually paper from the waste product of the Kingsport Extract Corporation of Kingsport, Tenn. Royal B. Embree and associates were lately reported as to undertake this enterprise, and the Kingsport Pulp Corporation has been chartered with a capitalization of \$650,000, Edward C. Badly of White Plains, N. Y., being secretary.

MUCH INTEREST MANIFESTED IN FOREIGN TRADE CONVENTION.

Large Attendance and Program of Comprehensive Character Are Assured.

Leaders in finance, commerce and industry, not only from this country, but from many foreign countries, have signified their intention to be present at the Third National Foreign Trade Convention at New Orleans, January 27-29. The final program, as announced by the National Foreign Trade Council, having the arrangements of the convention in charge, is as follows:

Thursday, January 27.

Morning Session.

Convention called to order by Chairman of the Council, Mr. James A. Farrell, President United States Steel Corporation. Address of welcome by the Governor of Louisiana, Hon. Luther E. Hall, and the Mayor of New Orleans, Hon. Martin Behrman. Address of welcome on behalf of New Orleans Commercial and Industrial Organizations, Mr. L. S. Goldstein. Address, "World Trade Conditions After the European War," Mr. Alba B. Johnson, President Baldwin Locomotive Works, Philadelphia. Election of President of Convention. Address, "Foreign Investment of American Capital As an Aid to Our Foreign Trade," Mr. James A. Farrell. Discussion, "Investment in Latin America," Mr. Percival Farquhar, President Brazil Railway Co., and Mr. E. J. Herwind, President Herwind-White Coal Co., New York. Address, "Investment in Central America," Mr. John Clausen, the Crocker National Bank, San Francisco. General discussion under 10-minute rule.

Afternoon Session.

Address, "Relation of the Tariff to World Trade Conditions After the War," Mr. Willard Straight, New York, President American Asiatic Association. Discussion, "Unfair Discrimination Against American Exports," Mr. J. J. Culbertson, Paris, Tex., Interstate Cottonseed Crushers' Association. Address, "Necessity for an American Dyestuffs Industry to Aid Export Trade in Textiles," Mr. Henry Howard, Vice-President Merrimac Chemical Co., Boston, Mass. An address on "Dumping" will also be read at this session. General discussion under 10-minute rule.

Group Sessions.

At 4 P. M. after the general session, the following group sessions will be devoted to detailed discussion of the subjects indicated:

Group I.

"How to Utilize the Export Commission Houses." Chairman, Mr. W. L. Saunders, Chairman of Board, Ingersoll-Rand Company, New York. Discussion: Mr. Daniel Warren, American Trading Co., New York; Mr. Victor Camors, J. B. Camors & Co., New Orleans, and others.

Group II.

"The United States Tariff System and Foreign Trade." Chairman, Mr. D. Y. Cooper, President Henderson Cotton Mills, Henderson, N. C.

Evening Session.

Address, "Commercial Education for Foreign Trade." Presentation of report of Committee on Commercial Education for Foreign Trade of the National Foreign Trade Council by Mr. W. D. Simmons, President Simmons Hardware Co., St. Louis, Chairman. General discussion.

The evening session of Thursday, January 27 will be held in the hall of the School of Commerce of Tulane University and will be one of the notable features of the Council. Dean Aldrich of Tulane University will preside. In addition to the report of the Committee on Commercial Education for Foreign Trade, addresses will be made by representatives of a number of the leading corporations of the United States, which have special departments for instructing employees in foreign trade methods.

Friday, January 28.

Morning Session.

Address, "The Merchant Marine," Mr. (to be announced). Presentation of report of the Merchant Marine Committee of the National Foreign Trade Council. Discussion by Capt. Robert Dollar, San Francisco; F. D. Strachan, Brunswick, Ga., and others. Address, "Co-operative Foreign Selling to Meet World Trade Conditions After the War," Mr. A. Oudin of the Foreign Department of the General Electric Co. Discussion, "Detail of Co-operative Foreign Selling—How Business May Be Fairly Divided—Method of Distribution, etc.," Mr. H. C. Lewis, General Manager National Paper & Type Co. (co-operative). Discussion, "How the Smaller Manufacturer May More Largely Share the Benefits of Foreign Trade," Mr. L. S. Smith, American Laundry Machinery Co., Cincinnati.

Afternoon Session.

(Friday afternoon to be devoted entirely to group sessions.)

Group I.

"The Smaller Manufacturer in Foreign Trade." Chairman, Mr. H. G. Herget, President Pekin Cooperage Co., Pekin, Ill. General discussion (five-minute rule). Leader of discussion, Mr. William Pigott, Vice-President Seattle Car & Foundry Co., Seattle; Mr. T. W. Van Koken Barber Supply Co., St. Louis.

Group II.

"The Merchant Marine." Chairman (announcement later). (This session to be devoted to continuation of discussion from the General Session.)

Group III.

"Co-operative Foreign Selling." Chairman (to be announced later).

Discussion by Mr. Chas. M. Muchnic, Vice-President American Loc. Sales Corporation, New York, and Mr. A. S. Terrill of A. S. Terrill & Co., Chicago.

Group IV.

"American Banking in Foreign Markets After the War," chairman, Mr. Sol Wexler, President Whitney Central National Bank, New Orleans.

Evening Session.

Convention banquet. Speakers: Mr. Frank A. Vanderlip, President National City Bank of New York; Mr. Fairfax Harrison, President Southern Railway Co., "The Relation of American Railroads to the Development of Foreign Trade"; Mr. Joseph E. Davies, Chairman Federal Trade Commission, "Co-operation in Foreign Trade."

Saturday, January 29.

Reception of reports from group sessions and action thereupon. Final business of Convention. Inspection of the Port Improvement Works of New Orleans.

SOUTHERN REAL ESTATE DECLARED A GOOD INVESTMENT.

Official of Tennessee and Memphis Real Estate Boards Says Real Value Is in Lands.

By EDWARD McCORMACK, Executive Secretary of the Memphis Real Estate Association, Secretary-Treasurer Tennessee Real Estate Dealers' Association.

A Memphis business man noted for his sagacity and remarkable success was talking to his banker about a little matter of some \$70,000 which he had to invest in some secure holding.

Said he to the banker: "Tell me the best propositions you have and I'll sit here and smoke and think and when you are done, if none of your propositions strike me as being favorable, I'll tell you what I have on my mind."

And so the banker told him wonderful stories of steel stock, of a few choice morsels of automobile stock that he had spotted and several other varieties of things that looked equally good.

The Memphis man of sagacious ways smoked until the little private office became as blue-gray as some of the steel around which the banker spun his hopes. An office boy quietly put up the window, and still the banker talked and still the would-be investor smoked.

Forty-five minutes later the big man in the chair stretched himself to his full length and delivered his verdict.

"They're all good, he acknowledged. They sound good, very good, but I'm going to put my money right here in Memphis, and it's going to be in real estate."

Then he picked out a certain small business block, where a few improvements were needed. "It'll take \$60,000 to swing that deal, and I'm allowing \$10,000 for improvements," he explained. The banker called a broker, and the three of them talked it over. The net result was a deal.

This is the general sentiment in the South nowadays in regard to real estate. It has become more pronounced in the past 30 days than ever. It first became felt several months ago, when real estate owners and brokers began to quietly remark to one another that "the market has hit bottom."

Looking over the situation peculiarly from a Tennessee viewpoint and generally from that of the entire South, the market has hit bottom. The man who buys Southern real estate today and buys it conservatively and with his eyes open cannot help but to make money.

In Memphis and in the Memphis territory I know of cases where splendid buys are offered at 10 to 15 per cent. below the price asked a few years ago. This is not quite so true in the country as it is in the city property, because the tendency has been "back to the farm," and the diversification campaigns which have started like small forest fires and swept over the South like a conflagration has taught the farmer the true value of his land. Or rather, I should say, it has taught the farmer the proper way to make his land pay the full value.

On the heels of the war the cotton crop was rather short, and this in itself raised the price, and the consequence is that the South has as much, if not more, money and prosperity this year as ever in her history.

Another feature of added interest was the fact that the South learned to live with the war. Instead of becoming something that gave rise to sensations and bank failures—of which, by the way, there were a re-

markable few—the war became a steady monotonous grind which within a few months offered a source of demand for livestock, clothing and other marketable products of farm and factory. While the sections of the South experiencing "war booms" are not nearly so numerous as those in the North and East, there are nevertheless many localities which the war has actually helped. In this city at present there are several factories running night and day making supplies which were necessitated by the war. One of them is making auto spokes, and the utilization of this factory came because the regular trade of the plant in question took all of the output of the spoke factories under contract and necessitated arrangements with an additional factory.

A \$300,000 Wood Products Company.

Outlining its plans for an important manufacturing enterprise, the Carolina Wood Products Co. of Asheville, N. C., wires the MANUFACTURERS RECORD as follows:

"Furniture plant now operating, 200x60 feet, with warehouses 175x64 feet, both three floors; building being constructed 385x94 feet, three floors, and storing sheds 200x64 feet, power plant and six drykilns; buildings to cost \$100,000; machinery, \$150,000; daily capacity 100,000 feet lumber to manufacture ready-cut houses, furniture, house trim and general planing mill line."

This company has been incorporated with \$300,000 capital stock. Frank Buell, president, and George E. Stevenson, treasurer.

A \$3,750,000 Chemical Company.

The American Chemical & By-Products Co., capital stock \$3,750,000, has been incorporated to manufacture chemicals and by-products. Its incorporators are as follows: B. G. Williams of Frankfort, Ky.; George McLeod of Versailles, Ky.; V. J. Howard of Covington, Ky., and J. W. Saunders of Waco, Tex. Mr. Williams wires the MANUFACTURERS RECORD: "Plant cost, approximately \$750,000; 500 tons coal per day."

Increases Capital to \$1,000,000.

The Dallas Trust & Savings Bank of Dallas, Tex., has decided to immediately increase its capital to \$1,000,000. The capital is now \$300,000, and at the recent annual meeting it was resolved to declare a stock dividend of 100 per cent. and also the issue of \$400,000 of new stock, which will be sold at par, although none will be placed on the market. The growth of business and improved financial and commercial conditions, it is stated, have required the increase. Henry D. Lindsley is chairman of the board; S. J. Hay, president and trust officer; H. D. Ardrey, vice-president and real estate officer; Alex. Sanger, H. A. Kahler and Wm. G. Breg, vice-presidents; Ernest R. Tenant, secretary; R. H. Ballinger and R. A. Ritchie, assistant secretaries.

Contract for \$1,000,000 Steamship.

Further particulars of the additional steamship ordered by the Ocean Steamship Co. of Savannah, mentioned in the MANUFACTURERS RECORD of January 13, have been received from W. H. Pleasants of New York, president of that corporation. Mr. Pleasants writes: "Contract for our second ship was let with the Harlan & Hollingsworth Corporation, Wilmington, Del., on December 31. It is to be an exact duplicate of the previous ship noted in the MANUFACTURERS RECORD. The tonnage is approximately 7200."

Each ship will be 435 feet long over all, the extreme beam length to be 54 feet and 4 inches. Each ship will carry 14 lifeboats and have speed of 12½ knots per hour. Each will have about 400,000 cubic feet of freight space and high-grade facilities for passenger service. The first vessel ordered is to be delivered in 26 months and the duplicate in 35 months. These steamships are for the company's passenger and freight service between New York and Savannah and Boston and Savannah.

Iron and Steel Plant for Texas

ANNOUNCEMENT OF \$2,500,000 CORPORATION TO DEVELOP TEXAS IRON ORE PROPERTIES AND ESTABLISH IRON AND STEEL INDUSTRY.

Dispatches from Beaumont indicate that the initial steps have been taken to secure the development of an iron and steel industry in Texas. A plant will be located at Beaumont, and it will utilize the extensive iron ore deposits of Cass, Marion and Upshur counties, in northeastern Texas.

The Texas Steel Co. will be organized with an authorized capital of \$2,500,000, and until a charter has been obtained the company will be in charge of trustees, chosen as follows: S. G. Burnett (chairman), C. T. Heisig, John L. Keith, T. S. Reed, Jr., and M. Guiterman, all of Beaumont, Tex.

Outlining the plans of this new corporation, Col. J. P. Featherstone of Longview, Tex., wires the MANUFACTURERS RECORD as follows:

"Beaumont people have subscribed \$1,500,000 and provided 200 acres of high land as site for the plant, with deep-water frontage and with connection by inland waterway canal with the Mississippi and Warrior rivers, getting coke at half what it now costs in this State; ore by one rail haul at \$1 per ton, thus assembling the material to make a ton of steel for \$2.50 per ton less than it can be assembled in Pennsylvania. The remaining \$1,000,000 of stock is now being assigned to Eastern and Alabama steel manufacturers and to other citizens of Texas."

ALUMINUM COMPANY OF AMERICA GOING AHEAD.

Working Out Details of Hydro-Electric and Aluminum Plant Construction in North Carolina.

Plans are progressing for the completion of the water-power development and aluminum works of the Southern Aluminum Co. at Badin, N. C., at the narrows of the Yadkin River, near Whitney, by the Aluminum Company of America, of Pittsburgh, which recently closed negotiations for the Southern properties.

The hydro-electric plant will be built by the Tallassee Power Co., principal office at Bryson City, N. C., of which Arthur V. Davis of Pittsburgh is managing official. This company, controlled by the Aluminum Company of America, is capitalized at \$1,000,000, and has purchased the Southern Aluminum Co. properties for about \$5,756,000, the purchases including the partially completed hydro-electric development originally planned to generate 70,000 kilowatts. The Aluminum Company of America will complete the aluminum works, and the Electro-Chemical Co., also controlled by the Pittsburgh corporation, will own the electric plant. The Southern plan was to use this development of electric power for the aluminum works.

It is stated that the Hardaway Contracting Co., Columbus, Ga., the original contractor for the dam and power-house, is now resuming construction, with the intention of completing the dam within 12 months. Construction plans have been changed so that the present power-house will be dismantled and replaced by another of later type on the west side of the river, requiring the excavation of 400,000 cubic yards of rock and earth, this contract having been sublet to the Rinehart & Dennis Company of Charlottesville, Va. Reports state that further plans provide for constructing a steel reinforced concrete building to cover 20 acres.

This big combined hydro-electric development and aluminum manufacturing enterprise of the Southern Aluminum Co. was taken over from the French capitalists who controlled it and were forced to cease construction because of the European war, their plans having contemplated an investment of \$10,000,000. The plans included a 70,000-kilowatt power-house, 400 electric furnaces, 600x600-foot alumina reduction-house, etc.

A continuation of this work through the Aluminum Company of America will probably ultimately involve an investment of more than \$20,000,000 in the South by that big Pittsburgh corporation, which has built

Colonel Featherstone controls a large acreage of these iron ore properties, his holding including 5700 acres in Cass county alone. For several years he has been working on plans for their development. Frequent reference has been made in these columns to these plans and the possibilities of establishing an iron and steel industry in Texas.

The new company's plans are said to contemplate a plant with an initial daily capacity of 300 tons of pig-iron to be manufactured into cast-iron pipe for water, gas and sewer mains. Future plans contemplate extending the field of operations to steel manufacture, including cotton ties, plates, bars, etc.

Mr. C. T. Heisig, one of the trustees, wiring from Beaumont, says:

"The organization of the Texas Steel Co., domiciled at Beaumont, the economic meeting point of the raw materials and the markets of the great Southwest, is the successful culmination of 10 months' investigation and preparation by Beaumont, and marks the dawn of the manufacturing era of this great empire, thus saving to Texas millions in transportation charges on the ore to Eastern furnaces and on finished products back to Texas."

aluminum works at Maryville, Tenn., and has plans for extensive additions there and for several hydro-electric developments on the Little Tennessee River. These developments are said to provide for a series of dams in Tennessee, where ultimately there will be 400,000 electrical horse-power generated, with rights extending into North Carolina. It is stated these Tennessee developments, recently outlined by the MANUFACTURERS RECORD, call for a \$10,000,000 investment.

A PROPOSED \$10,000,000 ZINC DEVELOPMENT.

Capitalists Investigating Tennessee Properties With View to Extensive Mining and Manufacturing.

New York and Philadelphia capitalists contemplate a \$10,000,000 investment for a zinc development enterprise in Tennessee, and are now investigating zinc properties in that State. It is reported that they have 11,000 acres of zinc land in Hancock county and are planning developments which will include establishing an industrial city, building a zinc plant with daily capacity of 10,000 tons, constructing a 26-mile railway from the Southern Railway two miles south of Lone Mountain to Sneedville, both of Tennessee, and later to Speers Ferry, Va., which is 12 miles distant.

Summarizing the present status of this proposed development, Samuel P. Wetherill of Philadelphia, the capitalist who has been mentioned in connection with the purchase, advises the MANUFACTURERS RECORD as follows:

"The Tennessee zinc property is a prospect, now under examination, entirely undeveloped. Deal has not been closed; deeds in escrow pending decision after full examination of property; distance from railroad and expense involved necessitate thorough investigation. Engineers and drills now on property. No company formed, and our future action cannot be outlined at present."

The Long Island (N. C.) Cotton Mills, Geo. H. Brown, president, Statesville, N. C., may build another mill. It expended \$32,000 for improvements during 1915, including construction of 230 feet of concrete dam, concrete forebay and power-house. New equipment provided for included three water-wheels, increasing hydro-electric development to 350 horse-power.

INDUSTRIAL CONDITIONS AT BIRMINGHAM.

Lull in Pig-Iron Buying Reported—Great Activity in Soil Pipe, Sheets and Bars—No Available Coke in the Market.

Birmingham, Ala., January 15—[Special].—There was no heavy trading in the pig-iron market the past week, though several orders of small tonnage were booked. There is no denying the fact that there has been a temporary lull in buying. Buyers seem to have gotten over their "stage fright" preceding the holidays, and are content more or less to rest on their oars.

There is no let-up, however, on the insistence of buyers for shipment of iron that they have already bought. There is a steady "pound" on the sellers to get out more iron. It has been somewhat difficult for sellers to meet their demands promptly, due to inadequate car supply and insufficient make to satisfy buyers, pro rata, from the block. Conditions, however, will soon adjust themselves—buyers will have not only taken care of their present needs, but will have some fair stock on hand to tide them over in stringencies. It would seem that the buyers made their mistake in not caring for proper stock three months ago, when shipping conditions were easy, though this condition is one of the "ups and downs" in the iron business.

The lessening in demand has not in any way affected the price, only checked its tendency somewhat, which is a blessing. Potent factors in the foundry end are quoting \$15.50 per ton at the furnace for first half delivery and \$16 per ton for last half delivery. There is also no denying the fact that there is considerable warrant iron on the market, which, up to the present time, has more or less conflicted with establishing a firm market price. Some of this iron is being thrown on the market at a price as low as \$14 and \$14.50 per ton at the furnace. Stocks on hand are comparatively light, when one considers that this time last year there were 500,000 tons on Alabama furnace yards. Today there is not more than half of this tonnage, with foundry grades low.

The soil-pipe interests of the Birmingham district are enjoying especially good times, and the large-pipe interests have advanced their prices \$2 per ton at their plants within the past three weeks. Enough business is reported by these interests to keep them running steadily for many months to come. The steel plant at Ensley is being rushed to its limit, with orders in hand sufficient to carry over the entire year. Sheets and bars are "sky high"—enough orders on the books to withdraw from the market for the balance of this year.

These are indeed good conditions for the Tennessee Coal, Iron & Railroad Co. The Gulf States Steel Co. will blow in its large blast furnace at that point within the next few days. This furnace has been out for repairs, though did not occasion a shut-down of the wire mills, sufficient stock being on hand to tide over.

There is no available coke in the Birmingham district, and prices put on this product are higher than for several years back. One interest is asking as high as \$4 per ton at the ovens for its foundry coke. This is an exceptionally good foundry coke, and commands from 15 cents to 25 cents per ton advance in price over other Alabama foundry cokes. Three dollars and seventy-five cents per ton is not an uncommon price for foundry coke. This same coke sold six months ago as low as \$2.90 per ton at the ovens. Ordinary furnace coke is selling at \$2.75 to \$3 per ton at the ovens. This same coke sold six months ago at \$2.35 per ton at the ovens.

The steam coal business is showing improvement. Heavy tonnages have been moving down the Warrior River lately. The DeBardeleben Coal Co. has just landed a tow of 1600 tons in Mobile harbor. The Pratt Consolidated Coal Co. will soon have its new barges in commission between its Maxine mines and Mobile. This will be a material improvement in the transportation of their coal.

Building is showing signs of revival in the district. At present there are quite a few large, commodious buildings being erected in the heart of the city. The trustees of Owenton College have let contract for the erection of a \$35,000 three-story building on the college campus, to be known as Science Hall. The city has purchased a valuable site in Woodlawn—2½ acres—and will erect a school building thereon.

Y. A. DYER.

News and Views from Our Readers

Calling Murder by Some Softer Name Would Not Lessen Its Guilt.

HERMAN GERSTLE, of Henry Sonneborn & Co., Inc., Baltimore, Md.

It is with undisguised surprise and regret that I note the MANUFACTURERS RECORD lends its columns to an editorial in as passionate and unjust an outburst of language as the one in your issue of January 6, entitled "Be Done With Diplomatic Correspondence," and not only condemning the German Government, but insulting every American citizen of German origin or with sympathetic leanings to his original fatherland (which he loves second only to his adopted land), in most ferocious and uncalled-for commentations and comparisons.

It is not my intention to weigh and consider the pros and cons or merits and demerits involved in the case, but certainly every man is entitled to his own opinion, and if sincere should be respected for such, and whatever differences may exist, if for any reasons, deemed essential, to feed to the public, it matters little, whether the majority of your paper's clientele is drawn from the British Empire and its possessions, there still exists a minority, and in consideration and justice to such minority and many others, foreign to any connection with your pamphlet, as well as not to undermine the command of faith and regard your staff may enjoy, such thoughts and opinions could most positively be given expression of in decidedly more dignified language and less objectionable comparisons, omitting entirely the throwing of epithetical bouquets.

Let me say to you in all frankness, free from any dictative attitude and actuated by the kindest spirit, it should be the object and interest of your paper to gain, cultivate and maintain the respect of manufacturers and merchants, and in order to accomplish such aim, it must necessarily not only avoid the initiation of the prize-ring in its invectives and the violence of its opinions, but instead adopt the mode of careful utterance and calm consideration which business breeds into the manufacturers and merchants. Then, and then only, will the pen prove so much mightier than the sword.

[In the editorial to which Mr. Gerstle refers and in other editorials on the subject we did not condemn all Germans, nor all who love their fatherland.

We have condemned very strongly, and expect to continue to condemn as vigorously as language permits, such evidences of cold-blooded murder as the sinking of the Lusitania and other acts which have disgraced the militarism and Kaiserism of Germany.

Fortunately, not all Germans uphold such acts. Those who do uphold them put themselves in a position of joining in work which has disgraced civilization.

There are some good honest-hearted, liberty-loving Germans who do not uphold the Kaiser in this kind of a campaign. They are the ones who must redeem the honor of their country. They are the ones upon whom will rest the tremendous responsibility of restoring Germany's reputation and standing in civilization and bringing it to the position of honor which it held before it entered upon this unscrupulous career of "frightfulness," led, not by the real spirit, we trust, of the German people, but by militarism and Kaiserism, which have been willing to go to any extent in order to win.

Robert E. Lee, the great Confederate general, in an order to his soldiers, warned them that the South did not make war upon women and children or unarmed men. He preferred that the South should lose with honor rather than win with dishonor. Unfortunately for civilization and for Germany, Kaiserism has not cared to follow the leadership of so great a character as Robert E. Lee, and it must lose, not with honor, but with dishonor.

In Mr. Gerstle's desire that the MANUFACTURERS RECORD should avoid "the initiation of the prize-ring in its invectives" (and just what this and a few other sentences mean we don't quite know), we must remind him that murder is murder wherever it may be done, and murder can only be called murder wherever men speak correctly. So long as men who uphold murder and Kaiserism in such dastardly deeds as the sinking of the Lusitania and others of the same kind and the

ravaging of Belgium, so long will they hear ringing in their ears civilization's bitter arraignment of such acts. If they want to save their own honor and their country's they must lead in repudiating and denouncing the acts which have left a blood stain upon Germany and her allies which centuries cannot efface.—Ed. MANUFACTURERS RECORD.]

Does Not Believe in Preparedness.

J. SINGLETON DIGGS, Lynchburg, Va.

In your issue of 6th inst. you publish a letter from E. Bird Grubb under the heading of "The Peril of Unpreparedness," in which the writer says:

"I have often wondered what is to prevent England, Germany and Russia linking themselves together after the present war and despoiling our country on account of its vast wealth and resources and alluring state of unpreparedness. It might be unprecedented, but why not?"

Now, Mr. Editor, suppose our country embarks upon a program of preparedness sufficient to resist the combination Mr. Grubb has conjured up, thereby taxing us into poverty. What is to prevent them from linking three more nations with themselves and despoiling our country? And when, after much taxation, tribulation and many weary years we get prepared to overcome that combination, what is to prevent them from hitching on a few more allies to come against us, and so on ad infinitum?

Why not cut short all such fanciful suppositions by wondering what is to prevent the sky from falling? "It might be unprecedented, but why not?"

I suggest to all such theorists to do a little wondering as to what has "prevented England, Germany and Russia from linking themselves together" against the United States during the past 130 years?

Overwhelmed With Answers to an Advertisement

NORTHERN IRON & STEEL CO., Philadelphia, Pa.

It may be a source of satisfaction to you to know the result of the notice in your paper that we were in the market for oak, pine and hemlock timber. To this date we have been brought in touch with 265 manufacturers, which we consider speaks volumes for the circulation of your paper among this class of people.

When we sent you the notice we did not realize that it would reach one-fourth of this number. While we knew the merits of the paper, it was far beyond our expectations.

Many Honest-Hearted Splendid Germans Are, to Their Credit, Against Kaiserism and Its Murderous Work.

T. F. SANFORD, of Sanford Bros., Chattanooga, Tenn.

Your article, "Why the MANUFACTURERS RECORD Expresses Its Opinion on World Questions," on page 42, December 30 issue, has been noted with considerable satisfaction, and, frankly, hits the spot with me. I have no patience with the opinion that we must keep our mouths shut in the face of what is going on before us, and believe that any red-blooded American during the present situation in its true light should feel about as one beholding innocent, unarmed and unprotected neighbors being assailed by robbers, murderers, etc.

The writer has a few German friends whose opinion he has learned to hold in high respect, and it has been with a great deal of satisfaction that I have found these men, some of whom were born in Germany, not only holding the same opinion, say, that I do, namely, that it would be calamitous to civilization for Germany to win this war, but actually making supplies for the Allies to aid them in their fight for world civilization. One of these men, by the way, is a manufacturer of engines (of the steam variety and not of the gas), and is now building machinery for the Allies to make ammunition with, with which to put an end to German militarism, which he hopes to see "smashed to a fare you well," to quote his own words.

It is my firm belief that Americans of the future

will not be very proud of the official attitude of this country to date during the war. The world is accustomed to hear the voice of America raised in protest against crime and wrong of every character, and surely many of the peoples of the earth wonder at our loss of voice.

Happily, there are some who are making themselves felt in giving voice to the true American position toward the issues and conduct of this war.

Free Fire Protection for Merchants and Manufacturers in Raleigh.

ALAN T. BOWLER, Secretary the Chamber of Commerce, Raleigh, N. C.

The City Commissioners of Raleigh have recently made the announcement that they would guarantee free fire protection for manufacturers who desire to locate in Raleigh.

Under the new plan any manufacturer who will install hydrants and a sprinkler system will be given free use of water with which to operate them. No rent will be charged for water that is kept available.

The same concession has been granted merchants in the fire district. If they will install sprinkler systems the Commissioners agree not to charge them rent for water used in putting out fires or for water kept at their disposal for cases of emergency.

This action of the Commissioners will have a tendency to reduce the fire hazard and will at the same time save each establishment from \$100 to \$150 per year.

Raleigh is the first city in North Carolina to introduce this plan, and is said to be one of the few in this country where it is in operation.

Select Mica Property Wanted.

JAS. C. LAW, Sales Engineer Cross Engineering Co., Carbondale, Pa.

I am commissioned by a well-to-do New England man, who represents a small group of private capital, to look up a select mica property, preferably in the Cowee Mountain district of North Carolina.

I shall be very glad if you can place me in communication with parties in reference thereto, and you are authorized to give this letter any publicity you desire.

CHEMICAL INDUSTRIES THE COUNTRY'S NEED.

Suggestions of Much Importance to the South Made by Eminent Authorities.

The eighth annual meeting of the American Institute of Chemical Engineers was held in Baltimore last week. Much importance attached to this meeting because of the great amount of attention now being given to the development of chemical industries in this country.

Special interest was, therefore, centered in the papers provided for the meeting. These include:

"The Development of the Manufacture in the United States of Products Derived from Coal," by H. W. Jordan, Semet-Solvay Company, Syracuse, N. Y.

"The Cracking of Petroleum and Other Hydrocarbons as a Chemical Engineering Problem," by W. F. Rittman, United States Bureau of Mines.

"Utilization of Wood Waste," by A. D. Little, president, Arthur D. Little, Inc., Boston, Mass.

"The Production of Ammonia from Cyanamid," by W. S. Landis, American Cyanamid Co., Niagara Falls, N. Y.

"The Barium Industry," by Maximilian Toch, Toch Bros., New York city.

"A New Process of Bleaching," by S. F. Peckham, Brooklyn, N. Y.

"Lutes and Cements for Chemical Purposes," by Samuel S. Sadtler, Samuel P. Sadtler & Son, Philadelphia, Pa.

"Ozone Purification of Water," by S. T. Powell, the Baltimore County Water & Electric Co.

"Changes in the Volume and Specific Gravity of L

seed Oil Films on Drying," by G. W. Thompson of the National Lead Co., Brooklyn, N. Y.
 "Artificial Daylight," by Dr. H. E. Ives of the Illuminating Engineering Society.

The paper by Dr. Jordan is printed in full in this issue. In it he fully reviews the need and requirements for the proper development of coal products industries in this country and emphasizes the important bearing which such industries have upon our program of "national preparedness."

The paper by Dr. W. F. Rittman attracted especial attention because he discussed processes developed by him for increasing the output of gasoline from crude petroleum and the manufacture of benzol and toluol, used in making synthetic dyes and high explosives, from heavy liquid hydrocarbons.

Dr. Rittman's paper was largely of a technical character, and explained in some detail the features of his processes. Illustrations were shown of experimental plants that have been established to utilize these processes, and the difficulties encountered in them were explained and plans outlined for the construction of a new plant embodying improvements suggested by previous operations.

In the process to increase the output of gasoline from crude petroleum, Dr. Rittman stated that as high as 60 per cent. of gasoline was being secured through his processes, and the importance of this can be appreciated when it is stated that the present methods used do not give more than 10 per cent. The great need of a means whereby an increased production of gasoline can be secured and the price can be kept down was emphasized by Dr. Rittman in referring to the fact that the 2,500,000 automobiles now in this country have a total horse-power of 50,000,000, which is more horse-power than generated by the steam plants of the country; there are on the farms 700,000 gasoline engines and in the country 300,000 motor boats, all of which gives some idea of the tremendous demand for gasoline.

This is further increased when it is considered that the automobile plants of the country are turning out machines at the rate of 4000 a day.

Dr. Rittman especially criticised the fact that railroads were allowed to consume crude petroleum in their locomotives, thereby burning up great quantities of gasoline that belong to future generations.

In speaking of the by-product coke-oven plants we have in this country, he stated that 10 years from now the methods of operating these plants would be entirely changed because at present they are being operated from a mechanical engineering standpoint, whereas, being a chemical industry, they should be operated from a chemical engineering standpoint, and predicted that this was bound to come about.

This same condition applied to a number of other chemical industries. The owners of them must realize that more efficient and better results will follow the conduct of their plants along chemical engineering lines.

Another paper was that delivered by Dr. Arthur D. Little of Boston, who discussed the utilization of wood wastes. He especially dwelt with the possibilities of utilizing the waste from long-leaf yellow pine in the South.

The greater part of Dr. Little's paper is published in this issue.

In connection with the meeting, special excursions were planned to various plants of special interest in and around Baltimore. These excursions were in charge of a local committee consisting of Richard K. Meade, chairman; F. G. Dailey, W. T. Van Horn and Dr. E. Emmet Reid.

At one of the business sessions the committee on public policy recommended that the National Government be advised that the Institute and its members would hold themselves in readiness to be of any general or specific service that the Government might require in its plans for national preparedness. This report was referred to the council for proper action.

The Institute re-elected as president Geo. D. Rosenzweig, Philadelphia, Pa.; secretary, John C. Olsen, Brooklyn, N. Y., and treasurer, F. W. Frerichs, St. Louis, Mo.

Charles F. McKenna, 50 Church street, New York city, and A. D. Little, 93 Broad street, Boston, were elected directors.

The Institute holds annually a summer meeting in the latter part of June, and Cleveland, O., was selected for the next one.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

Freight Embargoes Modified.

The embargo on all grain shipments except corn between points on the Baltimore & Ohio Railroad System for export through Baltimore was removed January 18. The embargo was placed December 15 last, when there were about 4000 carloads at Baltimore awaiting unloading and en route for export, and the embargo was an effort to forestall a congestion which was threatened following the placing of similar embargoes at other Eastern ports. Much of the grain on hand has been exported, and now there are 1900 carloads on the system, besides that stored in elevators. The removal of the embargo will enable the Baltimore & Ohio to accept shipments at Chicago, Fairport and other centers. The embargo against grain shipments from connecting railroads was not removed.

The Pennsylvania and the New York Central railroads have also modified their embargoes at New York. Excepting flour, cotton and lumber on through bills of lading, the Pennsylvania announces that it will accept all freight for export through New York, although the embargo is continued as to hay, straw and empty barrels for domestic delivery. However, shippers must cooperate by offering only such freight as can be disposed of promptly. A large volume of export business is being accepted by the New York Central Lines.

Edison Storage Battery Passenger Car.

The Chattahoochee Valley Railway Co. of West Point, Ga., has purchased from J. B. N. Cardoza & Co., Inc., of Norfolk, Va., dealers in railway appliances, an Edison electric storage battery car of 40 passengers capacity, which will be operated between West Point and Riverview, Ala. The car is to be delivered at an early date. Cars of this type have proved successful for service where it was desired to avoid the erection of poles and trolley wires, although having a power station conveniently located for recharging the batteries.

Washington-Newport News Short Line.

A charter has been filed at Richmond for the Washington-Newport News Short Line, which represents the consolidation of the Norfolk, Washington & New York Railway Co. and the Potomac River & Baltimore Railway Co. This merger is made, according to announcement, because the financial interests backing the enterprise deemed it best. Frank S. Gannon, 2 Rector street, New York, is president; F. S. Gannon, Jr., is vice-president and secretary, and Wm. H. Siebert, his law partner, is treasurer. The proposed railroad, as heretofore announced, is to run from Newport News, Va., to Washington, D. C., about 150 miles. The route is via Hampton, Gloucester Point, near Leedstown, Va., and to Metomkin Point, on the Potomac River, where a bridge will be erected, from which the route is via Indian Head, Md., to a connection with the Shepherds Branch of the Baltimore & Ohio Railroad, over which entrance to Washington will be obtained. From Leedstown a branch is proposed to a point on the Chesapeake Bay. Later it is hoped to make connection at Newcastle with an extension of the Richmond & Rappahannock Railway. It is expected to begin construction as soon as practicable, now that the charter is granted. Under the deeds granting right of way, the line must be completed and in operation by the end of 1919.

President Gannon says that matters are shaping up for the railroad, and, notwithstanding war conditions, there is excellent reason for assuming that construction will be under way this year.

The incorporators are Richard Armstrong of Hampton, president of the Armstrong Land & Improvement Co. and of Armstrong Bros.; William J. Burlee of Richmond, president of the Gloucester Bank and large land owner in Virginia; Hon. William A. Jones of Warsaw, member of Congress, First District of Virginia; James M. Lewis of Tappahannock, bank presi-

dent and Secretary of the State Board of Fisheries; Walter B. Livezey, president of the Old Dominion Land Co. of Newport News and of the Light & Power Co. of that city; Albert L. Powell, president of the Colonial Bank and Powell Trust Co. of Newport News, and Channing M. Ward of Richmond, president of the Norfolk, Washington & New York Railway Co.

New Equipment.

Mississippi Eastern Railway has ordered a 10-wheel locomotive from the Baldwin Locomotive Works, Philadelphia.

Chesapeake & Ohio Railway is still in the market for 2 parlor cars and 2 chair cars.

Southern Pacific Railway will purchase more than 4000 freight cars, including 2000 box cars, 700 stock cars, 650 flat cars, 300 tank cars, 250 gondola cars, 250 flat car bodies and 3 cabooses. It will also buy 10 baggage cars, 6 baggage and mail cars, 15 passenger cars and 6 postal cars. About 20 Mikado type locomotives will be ordered.

Mandie Clay Mining Co. of Whitlock, Tenn., has ordered a four-wheel switching locomotive from the Baldwin Works.

Vicksburg Light & Traction Co. is expected to be in the market for 2 closed electric street railway cars.

TWO-HUNDRED-MILLION-DOLLAR STEEL MERGER NEARLY COMPLETED.

Basis on Which Combination Will Probably Be Brought About.

[Special Correspondence Manufacturers Record.]

New York, January 19.

The long-pending combination of the Cambria Steel Co., the Lackawanna Steel Co., the Youngstown Sheet & Tube Co. and several independent companies of smaller size seems practically assured.

It is said that the new merger will change its original plans, which contemplated including shipbuilding companies with the steel plants, and that in its present form the combination will have as units only steelmakers.

This change, it is said, was made necessary by the present record-breaking activity and the fabulous freight rates which ocean tonnage is commanding. These two factors in the current situation gave shipbuilders and shipowners exaggerated ideas of their relative importance in a merger and made it for the time impossible for the promoters of the combine to meet their views as to values.

The capitalization of the new group is expected to be \$200,000,000, and it may go as high as \$250,000,000.

In the exchange of stocks of participating companies for stocks of the new company, Cambria Steel is expected to command \$160 per share, Lackawanna Steel \$90 per share and Youngstown Sheet & Tube stock \$300 per share. Some of the smaller companies which later may be included have not yet received any exchange status, and the figures heretofore quoted may be changed before the transaction is concluded.

New York State Steel Co., which is controlled by W. H. Donner, and the Iroquois Steel Co. of Chicago have been suggested as possible members of the merger.

Frank A. Vanderlip, president of the National City Bank, who was expected to serve as chairman of the board of the new amalgamation, has been obliged to decline because of pressure of business. James A. Campbell, president of the Youngstown Sheet & Tube Co., is now slated for the place.

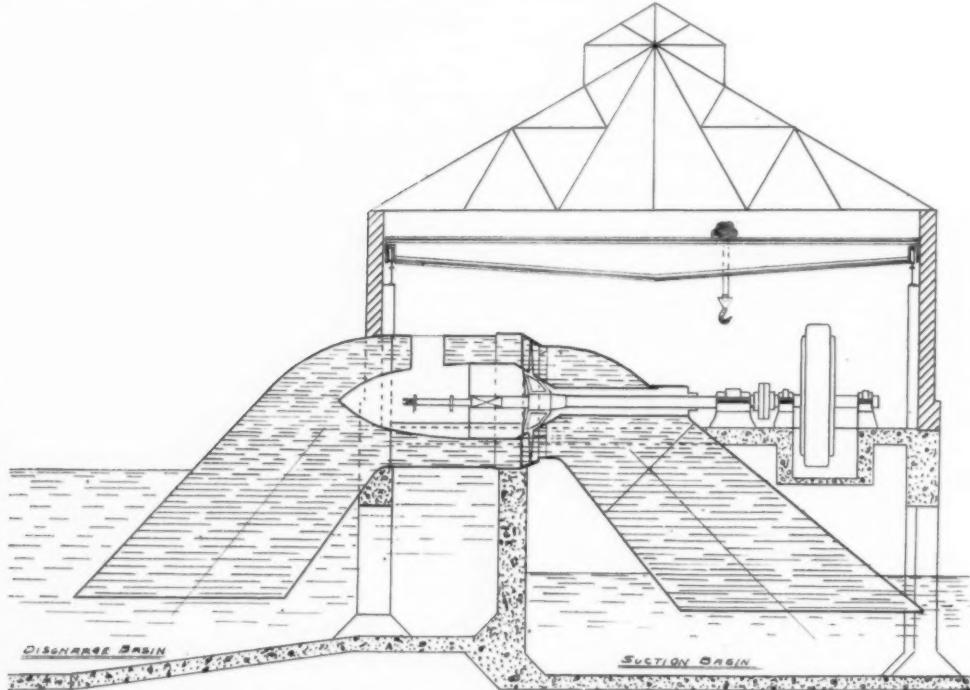
Leon Replogle, who headed the group which secured control of the Cambria Steel Co. against the bidding of Charles M. Schwab and the Bethlehem Steel Co., will be first vice-president. The directorate will contain many well-known names.

The Shelby (N. C.) Hosiery Mills Co. has remodeled building and purchased equipment, including 78 ribbers, loopers and knitters, electric drive, etc., for a daily capacity of 200 dozen pairs of hose. It will install a bleacher and possibly also a dye plant. This company was lately mentioned as incorporated with \$25,000 capital.

Unusual Construction and Remarkable Efficiency of Giant Pumps at New Orleans

Tests made by Prof. W. H. P. Creighton, dean of the department of technology of Tulane University, on one of the four recently-installed pumps in the New Orleans storm-drainage system, designed by A. B. Wood, mechanical engineer of the Sewerage and Water Board of New Orleans, resulted in records of such remarkable efficiency and revealed features of such supe-

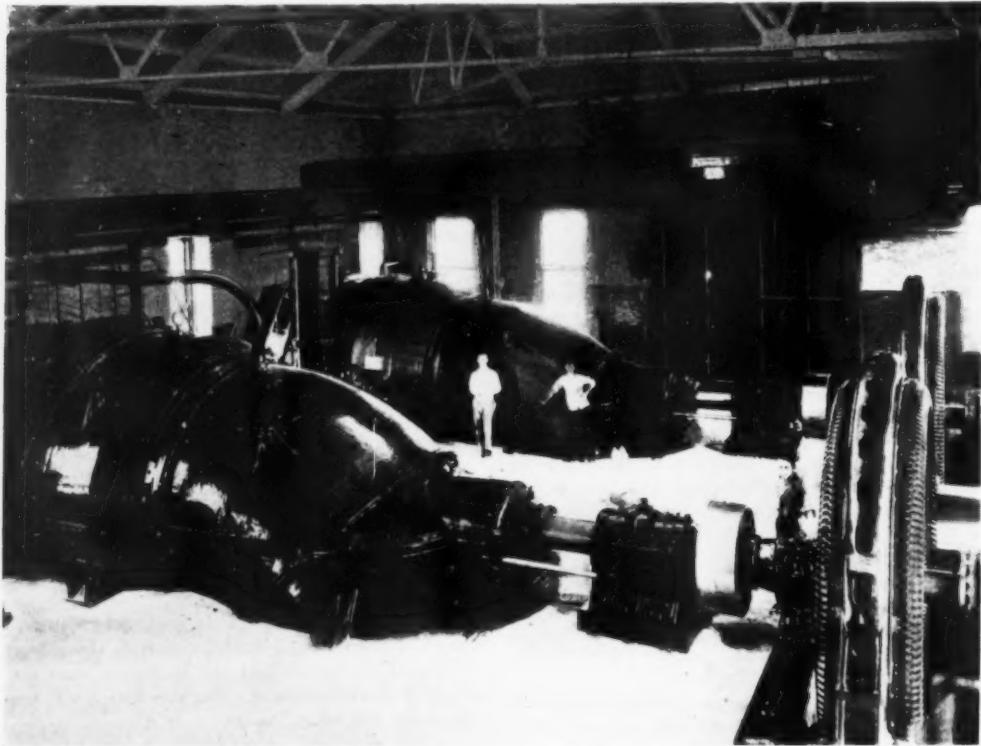
gallons per minute, against a 7-foot lift, at 75 R. P. M., and to work at this constant speed, driven by a 600-horse-power synchronous motor, for any lift from 0 to 10 feet. The pump proper consists of a horizontal cylindrical casing, 12 feet inside diameter and 19 feet 9 inches long, containing the impeller, or moving blades, and the stationary, or diffusion blades. The latter are



CROSS-SECTIONAL DRAWING OF WOOD 12-FOOT SCREW PUMP.

riority over the pumps previously thought to be the best that a general description of the pumps and what they do should be of interest to engineers and laymen having to do with pumping problems. The pump tested

mounted on a watertight, cone-shaped housing, within which is located a self-aligning bearing and marine type thrust bearing. The inner cone is 8 feet in diameter at the largest section. It is reached through an



INTERIOR VIEW OF PUMPING STATION, SHOWING WOOD SCREW PUMP INSTALLATION.

and described herein is located in drainage pumping station No. 1, and is a duplicate of the others of the installation referred to.

The pump is larger than any centrifugal pump ever built, and among the largest screw pumps, being 12 feet in diameter, of horizontal type, designed to give 225,000

oval-shaped, watertight manhole and passage, opening through the top of the pump, thus rendering it always accessible. A noteworthy feature is the placing of the screw at the summit of the siphon instead of submerging it, as is usually done. This makes it accessible, and obviates the necessity for the expensive gates to

give access to the submerged screw, and large check gates, which have been a constant source of trouble and expense, to prevent backflow in case the motor goes out of step.

On the suction side the pump is connected to a cast-iron 45-degree bend, through which the shaft enters, by way of a stuffing-box, to the pump screw. The part of the suction pipe below this is built of riveted sheet steel, and increases in sectional area, being 15 feet in diameter at the lower end. The discharge pipe varies from the suction pipe only in that it is made entirely of sheet steel and has no obstructions. The shaft is provided with another bearing and a flexible coupling between the stuffing-box on the pump and the motor.

Castings and parts of the pumps were manufactured by the Nordberg Manufacturing Co., Milwaukee, Wis. The 600-horse-power motor driving the pump is of three-phase, synchronous type, operating at 25 cycles and 6000 volts, with an amortisseur field winding. The motors were manufactured and installed by the Allis-Chalmers Company, Milwaukee.

The test conditions to which the pump under discussion was subjected were very disadvantageous to it, for, whereas pump tests are usually made under a constant head, this was made under a varying head, a serious handicap to the pump. The log of the test shows that the pump raised 251,550 gallons per minute through a height of 5,572 feet and 233,910 gallons per minute through a height of 7,6 feet, measured by a pitot tube, the pump making between 75 and 76 R. P. M., and its efficiency varying between 76 and 80 per cent. The specifications required a maximum delivery of 247,500 gallons per minute, through a lift varying from 5 to 9 feet when the motor was making 75 R. P. M. The efficiency expected was 70 per cent. It is readily seen that the pump not only complies with, but surpasses these requirements, showing a remarkably high efficiency at the higher lifts, and, what must be extremely satisfactory to the Sewerage and Water Board, a uniformly high efficiency at varying lifts.

A centrifugal pump for low lifts with the best characteristics will maintain about 8/10 of its maximum efficiency for a range of lifts equal to about 6/10 of the lift at which maximum efficiency is obtained. This new screw pump for low lifts maintains 8/10 of its maximum efficiency for twice as great range.

The experience heretofore of the Sewerage and Water Board has been that during great storms when lifts were much below the rated lifts, the older forms of pumps overloaded their motors and the power stations, so that not all pumping-station units could be maintained in service. The tendency to increase the quantity of water discharged at constant speed of operation as the lift decreases from the point of best efficiency exists in both types, but is slightly greater in the centrifugal pump. To do this, however, the centrifugal pump frequently requires a constantly-increasing applied brake horse-power, with the result that its power requirements must be applied with an especial view of meeting overload, which its lack of efficiency at its lowest lift produces. The new pump, on the other hand, when operating at a constant speed, shows a constantly-decreasing power demand as its lift decreases, and, while it still maintains an increasing discharge, it only uses its maximum power at its maximum lift.

To sum up: While the Wood screw pump surpasses in efficiency, under normal conditions, those of previous installations, the superiority is much greater just when the greatest service is required. Emergency service is probably the weak point of the old pumps; it is the forte of the new. Good evidence of its excellent qualities is given in the extending by the Sewerage and Water Board of its contract to include seven similar pumps to be operated by 1200-horse-power synchronous motors, working at 83 1/2 R. P. M. against any lift from 0 to 15 feet.

The Cotton Movement.

In his report of January 14 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 167 days of the season was 8,116,135 bales, a decrease under the same period last year of 934,046 bales. The exports were 2,546,472 bales, a decrease under last year of 502,524 bales. The takings were, by Northern spinners, 1,537,346 bales, an increase of 20,351 bales; by Southern spinners, 2,164,858 bales, an increase of 375,937 bales.

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TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

\$400,000 for Cotton Mill Additions.

About \$400,000 will be the cost of the additions (reported in December) decided upon by the Muscogee Manufacturing Co., Columbus, Ga. These improvements are outlined as follows: Construct 200x105-foot five-story mill, 150x45-foot two-story and 76x45-foot five-story additions; standard brick and wood slow-burning mill construction, with steel beams; probably award contracts by February 1; departments to include spinning-room, weaving-shed, machine-shop, bleachery and dyehouse; C. R. Makepeace & Co., Providence, R. I., are the architects and engineers in charge; install 22,000 spindles, 300 looms, etc.; has purchased all this machinery. The company is now operating an equipment of 28,000 spindles, 500 looms, etc., employing 650 operatives on the production of white, fancy and colored cotton cloth, towels, yarns, etc.

To Increase Bleaching Facilities.

An additional building costing \$5000 will be erected to provide increases for the Postex Cotton Mill's bleaching facilities at Post, Tex. It will be one story high, 100x40 feet, of brick construction, with steel sash and wire glass. R. E. Gilmore is the architect, and the Double U. Company is the contractor, both of Post.

A \$500,000 Mill Incorporated.

Capitalized at \$500,000, the Hawthorn Spinning Mills of Clover, S. C., has been incorporated to build a cotton-yarn mill. The incorporators are M. L. Smith, J. M. Smith and W. P. Smith of Clover, John R. Hart of York, S. C., and H. F. Richardson of New Bedford. This is the company lately mentioned as to be organized by M. L. Smith, secretary-treasurer of the Clover Cotton Manufacturing Co.

600 Additional Looms.

The Fort Mill (S. C.) Manufacturing Co. will build an addition to No. 2 mill and add 600 new looms, with spindles, cards, etc., this new additional machinery having been ordered. Its No. 2 mill looms will be removed to No. 1 mill and the entire floor space of No. 2 will then be used for spinning and carding.

Adding 4000 Spindles.

Spindles to the number of 4000, with accompanying machinery, will be installed by the Linn Mills Co. of Landis, N. C. An additional building will be provided to accommodate the new additional machinery and construction arrangements are being completed.

Cedartown Additions to Cost \$125,000.

Stating final details of plans for the Cedartown (Ga.) Cotton & Export Co.'s proposed additions, mentioned last week, S. S. Evans, general manager of the corporation, writes to the MANUFACTURERS RECORD as follows:

"Dimensions of additions, 75x256 and 66x100 feet; regular mill construction; cost about \$125,000; no architect; contractors, A. H. Duke & Son of Anniston, Ala.; 8640 spindles in addition, with accompanying other machinery for double carding; machinery cost about \$100,000; furnished by Howard & Bullough, American Machine Co., Pawtucket, R. I.; will employ 60 additional operatives; probably be completed by

June 1; Georgia Railway & Power Co., Atlanta, will bring transmission lines into town and the entire mill will be equipped with electric drive."

Textile Notes.

C. E. Hutchison and associates, Mt. Holly, N. C., are reported as to build a cotton-yarn mill.

The Hawkinsville (Ga.) Mill has been leased to D. E. Duggan, who will operate it as the Henry Cotton Mills, he being manager. This plant has 3000 spindles, 144 looms, etc.

M. L. Jackson, Salisbury, N. C., has purchased the Saurait Yarn Mill at Crouse, N. C., containing 1800 spindles, etc., and will probably renew the spinning equipment.

A dyehouse will be built at No. 3 mill of the Highland Park Manufacturing Co., Charlotte, N. C. It will be equipped with a large vacuum dyeing machine, a dryer, etc., and this equipment has been ordered.

Fields Manufacturing Co., Mouth of Wilson, Va., lately noted incorporated, succeeds Fields-Hash Manufacturing Co. It has 576 spindles, 10 broad looms, belt drive, etc., with 25 operatives employed.

An increase of capital from \$175,000 to \$525,000 has been provided for by the Coosa Manufacturing Co. of Piedmont, Ala. This additional investment is for new machinery, etc., during 1916, including 10,000 spindles previously announced.

W. Hopson Goodloe, American National Bank Building, Macon, Ga., writes to the MANUFACTURERS RECORD that he wants catalogues and prices on machinery for manufacturing cotton bagging from waste material. He has a client who contemplates building a small plant.

The Williamsburg (Va.) Knitting Mill Co., authorized capital \$30,000, has been incorporated and purchased an existing plant, the output of which will be increased. W. A. Bozarth, president; George P. Coleman, vice-president; C. M. Hall, secretary-treasurer; T. S. Griffin, manager-superintendent.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Record of Week's Progress in Improvements in City and Country.

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

Bonds Voted.

Bradentown, Fla.—Manatee county, Sarasota district, voted \$250,000 bonds to construct roads, etc.

Canton, Miss.—Madison county, District No. 2, has issued bonds to construct gravel roads costing \$100,000.

Darien, Ga.—McIntosh county will issue \$20,000 bonds for road construction.

Durant, Okla.—Bryan county, Township No. 9, voted \$25,000 bonds to improve roads.

Georgetown, Ky.—Scott county voted \$100,000 bonds to improve roads.

Sebring, Fla.—City voted \$50,000 bonds to pave streets with asphalt.

Bonds to Be Voted.

Centerville, Tenn.—Hickman county votes March 1 on \$200,000 bonds to construct roads.

De Ridder, La.—Beauregard parish votes January 22 on \$700,000 bonds for road construction.

Luling, Tex.—Caldwell county, Road District No. 3, votes January 22 on \$50,000 bonds for road construction.

Lonsdale, Tenn.—City will vote on \$30,000 bonds for street improvements.

Ozark, Mo.—Christian county, Billings eight-mile

road district, votes January 19 on \$40,000 bonds for road construction.

Pass Christian, Miss.—City votes January 31 on \$30,000 bonds to improve streets.

Contracts Awarded.

Giddings, Tex.—Lee county awarded \$30,000 contract to construct roads.

Dadeville, Ala.—Tallapoosa county awarded contracts to improve 44 miles of roads; cost \$60,000.

Philippi, W. Va.—City awarded contract to pave eight blocks with brick.

Contracts to Be Awarded.

Atlanta, Ga.—City will expend \$139,460.27 for street improvements during 1916.

Cherokee, Okla.—Alfalfa county has plans for five miles of road work; cost \$9000.

Dunedin, Fla.—Town receives bids until February 4 to construct about 13,300 square yards paving, 14,000 feet concrete and granite curb, etc.

Florence, S. C.—City will construct 12,000 square yards reinforced concrete roadway and 10 miles of concrete sidewalks; \$15,000 available for roadway; \$25,000 for sidewalks.

Hamilton, Ala.—Marion county receives bids until January 31 to gravel 10 miles of roads.

Hammond, La.—City will expend \$20,000 to gravel eight miles of streets.

Little Rock, Ark.—City opened bids January 18 to pave 10½ blocks in Street Improvement District No. 235; brick, sheet asphalt, asphaltic concrete and bituminous.

Tazewell, Tenn.—Claiborne county will grade and macadamize 29 miles of roads.

Prosperous Year for St. Joseph, Mo.

Reports recently made at a meeting of the Commerce Club of St. Joseph, Mo., showed a healthy expansion of the city's interests, industrial and commercial. H. E. Mooers, industrial commissioner, reported the locating at St. Joseph of the Missouri-Kansas Tank Co., manufacturer of steel tanks, etc.; the American Mirror & Plate Glass Co., an oil refinery, the Hoffine Bulletin System, manufacturing steel signs; plant of W. F. Thompson for the manufacture of a patent door hanger, the building of a half-million-bushel grain elevator costing \$150,000 by the Swift interests, and many other projects.

The stockyard business showed an increase of 13 per cent. over the preceding year's, which is said to be the second largest relative increase made in that period by any market in the country. The \$68,000,000 business of the stockyards was run a close second by the packing-houses, with an output valued at \$64,670,000.

The year was a good one for building. Schools and hospitals figured materially in this department of activity. While under the supervision of a separate corporation, the new school facilities, under way or projected, amount to \$650,000. Two hospitals well advanced in construction will cost approximately \$500,000. Dwellings to the amount of about \$1,000,000 were started during the year.

Public utility companies of St. Joseph expended a quarter million dollars on improvement and extension work.

Prospecting for Potash in Texas.

WILL A. MILLER & SONS, Amarillo, Tex.

Prospecting for potash is in progress in Potter and Randall counties, Texas, but there is as yet little to report. However, the Government is at work about five miles west of Amarillo on a test well now about 400 feet in depth, with the work progressing nicely.

The 20,000 acres which we propose to test out is located 12 miles south of the Government well, on the Palo Duro Canyon. It will be necessary to core this and all other wells after the potash and salt is reached. We put down one well 2000 feet, but did not use the core drill, as we were in search for gas and oil.

It is our intention to put down another well on our property just as soon as we get some data from the well the Government is now at work on.

All of this work is necessarily very slow. This looks to be a very promising field, but will have to be tested out before we are in position to say that it is "paying."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Birmingham.—City Com. will construct \$6000 concrete bridge over Village Creek at 24th St. to replace structure lately noted burned; Julian Kendrick, City Engr.

Ark., Cemden.—Ouachita county let contract Oats, Haynes, Taylor Co. of Texarkana at \$30,000 to repair Martin free bridge over Ouachita River; repairs to consist of replacing main pier under draw section.

Fla., Bradenton.—Manatee county, Sarasota Dist., voted \$250,000 bonds to construct bridges and roads. Address County Commissioners. (Lately noted.)

Fla., Miami.—City, W. B. Moore, Clerk, asks bids until Feb. 17 (postponed date) to construct lately-noted 2 bridges, one at 12th St., other at Ave. D; each to consist of bascule span of structural steel with approaches, either side, of reinforced concrete arches or girders; Harrington, Howard & Ash, 1012 Baltimore Ave., Kansas City, Mo., Consult. Engrs. (See Machinery Wanted—Bridges (Concrete).)

Ga., Atlanta.—Council Finance Committee authorized total appropriation of \$53,481.69 for bridge construction, to be divided as follows: \$20,637 to build S. Pryor St. bridge for driveway to Lakewood; \$10,000 to repair Edgewood Ave. bridge; \$5422.60 to build underpass on North Blvd. at Piedmont Park; \$8651 to repair and repave Mitchell St. bridge; \$8771.00 to repair other smaller bridges.

Ga., Helen.—City, R. D. Smith, Mayor, will construct highway bridge across Chattahoochee River; structure 65 ft. long, 18 ft. wide; city to erect the bridge and construct concrete work on abutments. (See Machinery Wanted—Steel (Bridge).)

N. C., Burgaw.—Pender county will construct bridge over Northeast River at Lane's Ferry; County Comms. receive bids until Mch. 7.

S. C., Charleston.—Seaboard Air Line Ry., W. D. Fauvette, Ch. Engr., Norfolk, Va., contemplates constructing 7 bridges between Charleston and Savannah, Ga.; Broad River bridge to have opening of 50 ft.; Combahee River and North Wimbee Creek bridges to be of swing type with two 35-ft. openings; other structures to be fixed bridges of smaller size; understood United States Engs. at Charleston have approved plans.

Tex., Austin.—City will construct concrete bridge across Shoal Creek at State St.; John O. Johnson, City Clerk, receives bids until Jan. 18; M. C. Welborn, City Engr.; P. W. Powell, Supt. Streets and Public Improvements. (See Machinery Wanted—Bridge Construction.)

Tex., Austin.—City has plans and specifications by Bartlett & Ranney, Consil. Engrs., San Antonio, for 6 bridges, as follows: Reinforced concrete structures over Waller Creek at 1st, 14th and 29th Sts. and Speedway; extension of masonry arch and bridge over Waller Creek at 22d St. and concrete arch bridge over Shoal Creek at 12th St.; City Com. will receive bids until Feb. 7. (See Machinery Wanted—Bridge Construction.)

W. Va., Charleston.—Kanawha and Clay counties will construct steel highway bridge with masonry foundation between two counties across Elk River at point surveyed and located by Frank G. Burdett, County Road Engr., near Queen Shoals; County Comms. receive bids until Feb. 19. (See Machinery Wanted—Bridge Construction.)

Fla., Lakeland.—Collins Canning Co., capital \$50,000, Incptd.; Howard L. Collins, Prest.; Josiah M. Dresser, V.-P.; Glenn F. Witter, Secy.-Treas.

Fla., Tampa.—Company organized with \$100,000 capital; Jos. Mizell, Prest., Arcadia, Fla., and Geo. Booth, Mgr., Tampa; will establish packing plant; also erect \$25,000 brick building for cold storage and refrigerating plant.

Fla., Valona.—Atwood River Canning Co., capital \$5000, Incptd. by W. T. Kittles and P. R. Kittles.

N. C., Newbern.—Derrickson & Martin, Dover, Del., are reported as contemplating establishment of cannery.

N. C., Shallotte.—F. S. Webster will establish lately-noted plant for conserving seafood in glass only; equipment is supplied. (See Machinery Wanted—Glassware.)

Tex., Ellendale.—Ellendale Canning & Milling Co., capital \$10,000, Incptd. by J. R. Coats, Henry B. Johnson, G. M. Schloss and B. E. Moses.

Tex., Nixon.—C. H. Hess of Cuero Packing Co., Cuero, Tex., and J. H. Edison of Philadelphia, Pa., contemplate establishing packing plant.

Va., Newport News.—O. A. Bloxom of Battery Park, Va., will build oyster, crab and fish-packing plant to cost \$5000. (See Miscellaneous Factories.)

CLAYWORKING PLANTS

Ark., Pocahontas.—Bricks.—Pocahontas Brick Mfg. Co. organized by Jos. Baltz, Jos. De Clerk, Jos. Peters and others.

Ky., Paducah.—Paducah Clay Co. increased capital from \$4000 to \$12,000, as lately noted. (See Mining.)

N. C., Pine Hill—Paving Bricks, Fireproofing, etc.—Shale Paving Brick & Fireproofing Co., capital \$100,000, organized; C. M. Thomas, Prest.; Jas. L. Wall, V.-P. and Gen. Mgr.; Joel R. Hill, Secy.-Treas.; acquired Dan River Brick Co. property; will remodel plant; install 6 new down-draft kilns to provide daily capacity 50,000 bricks; also manufacture fireproofing materials, hollow-ware, etc.; home office at Pine Hill; sales office at Winston-Salem, N. C. (See Machinery Wanted—Clayworking Equipment.)

Okla., Ponca City—Bricks.—Ponca City Buff Brick Co., capital \$75,000, Incptd. by C. W. Field of Ponca City, Dave Oliver and J. G. Ramsey of Blackwell, Okla., and others.

Va., Norfolk—Bricks.—A. L. Ward is reported as contemplating installation of power equipment in plant at Ocean Park to increase daily capacity of plant from 6000 to 13,000 cement-sand bricks.

COAL MINES AND COKE OVENS

Ky., Pineville.—White Star Coal Co., R. B. Moss, Gen. Mgr., will install electric hoist for both employee and material; 2500-ft. incline with 58 per cent. maximum grade. (See Machinery Wanted—Hoist (Electric).)

Ky., Pleasant View.—Estes Jellico Coal Co., capital \$4000, Incptd. by J. T. Estes and others.

Okla., McAlester.—McAlester-Alderson Coal Co., capital \$25,000, Incptd. by Martin Clark, Wm. Cameron and John S. Cameron.

Va., Wise.—Wise Coal & Land Corp., capital \$100,000, chartered; C. A. Johnson, Prest.; C. M. Fulton, Secy.

W. Va., McWhorter.—McCormick Coal Co., capital \$15,000, Incptd. by Milton A. McCormick, Donald McCormick, J. L. Kaufman and others.

W. Va., Wheeling.—West Virginia & Fairpoint Coal Co. is reported to develop additional coal mine.

CONCRETE AND CEMENT PLANTS

Ky., Louisville—Tile.—Cement Floor Tile Co., capital \$5000, Incptd. by S. W. Graves, D. D. Graves and S. W. Greene.

N. C., Asheville—Tile, etc.—Asheville Concrete Co., capital \$25,000, Incptd. by Chas. Russell, C. E. Bonstal and V. L. Gudger; plant on French Broad River to manufacture concrete tile, piping, etc.

Va., Fordwick—Portland Cement.—Lehigh Portland Cement Co. of Allentown, Pa., is reported as follows: Recently completed purchase of Virginia Portland Cement Co.; ceased operations for thoroughly overhauling Fordwick plant; probably enlarge in near future; 13th plant acquired by Lehigh corporation. (Reported in Dec. as having concluded negotiations for purchase of Virginia Portland Cement Co.)

COTTON COMPRESSES AND GINS

Ark., Pine Bluff.—Pine Bluff Compress & Warehouse will rebuild burned plant.

Miss., Tupelo.—Independent Compress & Warehouse Co., H. H. Womble, Prest., and M. T. Murphree, V.-P. and Mgr., will rebuild cotton compress; increase capital \$50,000; erect mill-construction and brick building; install new press; compress and store cotton. (Lately noted burned, as Citizens' Compress Co.'s plant.)

COTTONSEED-OIL MILLS

Tex., Plainview.—A. N. Deering and others, Waco, Tex., plan to build cottonseed-oil mill to cost \$75,000.

DRAINAGE SYSTEMS

Ark., Ozan.—Hempstead county, Ozan Dist. No. 1, let contract to E. J. Hahn, Little Rock, Ark., to construct drainage system; district comprises 2500 acres along Ozan Creek; bonds available; D. M. City and others, Comms.

N. C., Mooresville.—Upper Coddle Creek Drainage Dist. for Iredell, Cabarrus and Rowan counties will construct about 11 mi. drainage ditch; Drainage Comms. receive bids until Jan. 24 at office Z. V. Burlington; J. A. Craven and others, Comms. (See Machinery Wanted—Drainage.)

Okla., Tulsa.—Tulsa county will construct drainage ditch between Sections 1 and 2, Township 17 North; County Comms. received bids Jan. 17; Lewis Cline, County Clerk.

ELECTRIC PLANTS

Ala., Fairhope.—City voted \$5000 bonds to construct electric-light plant; Xavier A. Kramer, Engr., Magnolia, Miss.; A. O. Belglin, Mayor. (Lately noted.)

Ala., Hartsboro.—City votes Feb. 9 on \$8000 bonds for light and water plant extensions; Wheeler Williams, Mayor.

Ala., Moulton.—Moulton Water-Works, H. C. Dunn, Gen. Mgr., decided to install electric plant lately noted contemplated; equipment will include 15 or 20 H. P. crude-oil engine (double cylinder) for electric lighting and 15 K. W. compound-wound generator direct-current belt driven from above engine. (See Machinery Wanted—Electric Plant; Piping; Plumbers' Supplies.)

Ark., Hartford.—City has formed electric lighting and water-works improvement district; engaged Benham Engineering Co., Constl. Engr., Oklahoma City, to make investigations and estimates, prepare plans and specifications etc.; city plans bond issue (Noted in Dec. as contemplating to construct electric plant and water-works.)

Ark., Marion.—Comms. Crittenden County Drainage Dist. No. 7, H. F. Wallis, Chrmn., Turrell, Ark., let contract R. H. & G. A. McWilliams of Memphis, Tenn., and Chicago, Ill., to construct drainage system; 44 mi. canals; 1,900,000 cu. yds. earth excavation; reclaim 40,000 acres; \$200,000 bond issue available; Morgan Engineering Co., Engr., 68 Goodwyn Institute Bldg., Memphis, Tenn. (Further facts lately noted.)

Ark., Sulphur Rock.—Smith Bros. will build electric-light plant.

Fla., New Port Richey.—R. L. Gillet intends to install village electric-light plant. (See Machinery Wanted—Electric Plant.)

La., Juliette.—Juliette Milling Co. may extend electric-lighting system for general public lighting; recently installed dynamo to increase its electric plant.

Ga., Pearson.—Pearson Mfg. Co. has municipal franchise for electric-light plant and water-works.

Ga., Woodland.—City will build electric plant; develop 20 H. P.; install 20 H. P. oil or gasoline engine and 9 or 10 K. W. generator; date of opening bids not set; J. H. Woodall, Engr., Woodland; W. B. Jordan, Mayor. (See Machinery Wanted—Engine; Electric Generator.)

Ky., Hodgenville.—Hodgenville Lighting Co., capital \$5000, Incptd. by C. L. Heron, J. F. Herron and others.

Ky., Kuttawa.—Kuttawa Milling Co., Wm. Eades, Mgr., contemplates installation of electric light and power plant in Sept.; use storage batteries, not to be operated at night, but to have 48 hrs. storage capacity. (See Machinery Wanted—Electric Plant.)

Ky., Louisa.—Sandy Valley Light & Power Co., Pikeville, Ky., will build power plant.

Ky., Mt. Sterling.—City, R. A. Chiles, City Atty., will engage consulting engineer to make preliminary survey relative to proposed establishment of municipal electric-light plant. (Lately noted.)

Ky., Princeton.—Town Council voted to accept proposition of Princeton Electric Light & Power Co. to furnish electricity.

La., Crowley.—Acadia Iron Works will install 25 H. P. crude-oil engine and 25 K. W. A. generator to light plant and operate machinery; four 5 H. P. and two 1 H. P. motors; equipment ordered.

La., New Orleans.—New Orleans Ry. & Light Co. is preparing plans to install street-lighting system; estimated cost, \$160,000.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Md., Centerville.—City contemplates installing 175 H. P. boiler or 100 to 125 H. P. crude-oil Diesel engine set; L. D. Shank, Mgr. of plant. (Lately noted contemplating installing 175 H. P. boiler.)

Md., Sharptown.—Eastern Shore Gas & Electric Co., Day & Zimmermann, Gen. Mgrs., 611 Chestnut St., Philadelphia, Pa., is constructing transmission line from Sharptown to Cambridge, Md.; this is only large work being undertaken at present; is making many minor improvements; further facts regarding future plans may be announced within 2 or 3 months. (Noted in Sept. to have acquired control of Salisbury Light, Heat & Power Co. and Cambridge Gas, Electric-Light & Power Co. and to improve.)

Miss., Pontotoc.—Pontotoc Electric Light & Power Co., L. E. Price, Mgr., writes to Manufacturers Record: "We will install additional machinery, consisting of two 3-phase generators, probably 40 and 60 K. W.; additional boiler of 60 to 80 H. P., a 50 H. P. oil engine and switchboard." (Lately noted to install machinery, etc.)

Miss., Pass Christian.—City votes Jan. 31 on \$7000 bonds to erect ornamental electric-light posts, wiring, etc.; Xavier A. Kramer, Engr., Magnolia, Miss. (Noted in Dec.)

Mo., Camden.—Missouri Gas & Electric Service Co. applied for franchise to install electric-light plant.

Mo., Joplin.—City contemplates \$100,000 bond issue to improve and enlarge electric-light plant; C. A. Patterson, Commr. of Public Utilities.

Mo., Kansas City.—City sold \$50,000 bonds to extend electric-light system. Address The Mayor.

Mo., Kirksville.—City, Chas. E. Murrell, Mayor, contemplates extension of plant at cost of \$50,000 to \$100,000; daily capacity, 2,000,000 gals.; Clyde Downing, Engr. (Lately noted to vote on \$100,000 bonds.)

Mo., Monett.—Ozark Power & Water Co. will build substation to cost \$40,000.

Mo., Spickard.—City contemplates electric-light system. Address The Mayor.

Mo., Springfield.—City defeated \$400,000 bonds for construction of electric-light plant; T. J. Moore, City Clk. (Lately noted to vote on Jan. 11.)

N. C., Nashville.—City votes Feb. 15 on \$10,000 bonds to construct electric-light system; M. W. Lincke, Mayor.

N. C., Washington.—Washington Lighting Co., capital \$150,000, Incptd. by J. T. Bland and Stephen C. Bragan of Washington and Lawson Bachman of Philadelphia, Pa.

Tenn., Friendship.—W. H. Sudbury purchased local electric-light plant and will improve.

Tenn., Kingsport.—John A. Miller, Nazareth, Pa., Prest. of Clinchfield Portland Cement Corp., advises Manufacturers Record: We propose to build electric-power distributing station; 7000 to 10,000 k. w. h. capacity; several large enterprises already closed contracts for electricity for their requirements; this development will take form of extension and enlargement of present power plant, which supplies electricity required in operation of own plant; plans contemplate most modern design, equipped with latest power-generating machinery; propose to have completed within 6 months; L. L. Griffiths, Gen. Supt., Kingsports, able to give detailed information.

Tenn., Kingsport.—Federal Dyestuff & Chemical Co., 30 Pine St., New York, will build steam-driven electric power plant for its chemical factory (lately detailed under Miscellaneous Factories) under construction; equipment to include steam turbine-driven A. C. generators and either rotary converters or motor generator sets; probably equip boilers with mechanical stokers; plant cost, \$100,000; awarded contract to Southwestern Engineering Co., Bristol, Va. Tenn., to design and build this plant.

Tenn., Nixon.—City Council has been petitioned for franchise to build electric-light plant. Address The Mayor.

Tex., Sour Lake.—Sour Lake Ice & Light Co. will be Incptd. by F. H. Carpenter and others to operate combined electric-light and ice plant; is having plans prepared for brick or cement building; electric plant to develop 100 H. P.; total estimated cost \$40,000. (Mr. Carpenter lately noted to have organized company, etc.)

FERTILIZER FACTORIES

Ala., Montgomery.—Alabama Chemical Co., Vandiver Bldg., organized; W. B. Stratford, Prest. Treas.; D. C. Allen, V.-P.; F. C. Battey, Secy.; John H. Hunter, Chrmn. Director; continues established fertilizer plant. (Lately noted Incptd., capital \$225,000.)

Md., Curtis Bay.—Rasin-Monumental Co., 404-405 National Marine Bank Bldg., Baltimore, will improve and erect additional buildings to plant at Seawall, Curtis Bay, including enlargement of acid and fertilizer plants; steel, concrete and brick construction; most of work is being undertaken by company's own engineers.

Miss., Vicksburg.—Valley Mfg. Co. organized with Louis Rothschild, Prest.; Geo. Williamson, V.-P.; Sam Albrecht, Secy. Trens.; Gus M. Brown, Mgr.; has building and machinery; will manufacture fertilizer, feed and mill fiber. (Lately noted Incptd. with \$5000 capital.)

N. C., Greensboro.—American Agricultural Chemical Co., 2 Rector St., New York, is reported as contemplating erection of plant to manufacture and mix fertilizer; building reported to be 600 ft. long, equipped with 4 machines, etc.

FLOUR, FEED AND MEAL MILLS

Ala., Montgomery.—H. M. Hobbie Grocery Co. will erect corn warehouse costing \$3500 and install equipment, including shellers, costing \$7500 additional. (See Warehouses, under Buildings Proposed.)

Ky., Hardinsburg.—Hardinsburg Mill & Elevator Co. increased capital from \$15,000 to \$18,000.

Ky., Kuttawa.—Kuttawa Milling Co. organized; C. J. Clifton, Prest.; W. M. Beard, V.-P.; Wm. Eades, Secy.-Mgr.; purchased plant with daily capacity 75 bbls. flour and 250 bu. meal; storage capacity 30,000 bu.; lately noted Incptd., capital \$12,000; contemplates installing electric light and power plant in Sept. (See Machinery Wanted—Electric Plant.)

N. C., Hominy.—J. K. Luther Co. will build milling plant.

N. C., Rougemont.—W. A. Carver is interested in proposed installation of roller-mill machinery, capacity 25 to 30 bbls. per 24 hrs., and cornmeal mill of 8 to 12 bu. per hr. capacity. (See Machinery Wanted—Flour and Cornmeal Mills.)

Tenn., Ellendale.—Ellendale Canning & Milling Co. Incptd. by J. R. Coats and others. (See Canning and Packing Plants.)

Tenn., Memphis.—U. S. Feed Co., capital \$3000, Incptd. by S. E. Rison, A. L. Hall, G. C. McCarroll and others.

FOUNDRY AND MACHINE PLANTS

Ala., Sheffield—Stoves and Ranges.—King Stove & Range Co. organized; W. H. Palmer, Supt.

Ky., Louisville.—Elevators, etc.—Falls City Elevator & Machine Co. Incptd. by John O. Arnold, G. J. Smith and Margaret Zettler.

Md., Baltimore.—Oil Engines.—Baltimore Oil Engine Co., Alfred W. Gieske, Prest., 3 and 5 E. German St., advises Manufacturers Record: Altered plans for buildings; instead of structures recently noted, will build 1 structure 200x100 ft.; Walter M. Gieske, Archt., 65 Gunther Bldg., Baltimore; company proposes installation equipment for constructing oil engines of 5 to 1000 H. P., and even larger; internal-combustion oil engines under system patented by Leon Wodgsky, V.-P. and Gen. Mgr. (Lately noted incorporated with \$1,050,000 capital stock, etc.)

Mo., St. Louis.—Gas Engines.—Busch-Sulzer Bros.—Diesel Engine Co. will build \$40,000 addition to plant.

Mo., St. Louis.—Liberty Foundry Co., 7900 Reilly Ave., will erect lately-noted addition by company's force; brick, 83x153-ft. mill-construction building; all bids closed; will have daily capacity 18 tons.

N. C., Norlina.—Kerosene-oil Fuel Apparatus.—White Kerosene Fuel Co., capital \$100,000, Incptd. by Louis B. White, F. N. Davis and F. S. Vial of Norlina and R. L. Davis of Raleigh, N. C.

N. C., Winston-Salem.—Subsoil Plows.—American Subsoil Plow & Mfg. Co., capital \$125,000, Incptd. to manufacture patented subsoiling plow; later will establish manufacturing plant; Dan T. Marable, Prest.-Mgr.; W. E. Franklin, Secy., and J. H. Grubbs, Treas.; all of Winston-Salem; Geo. B. McLeod (Prest. First National Bank of Lumberton), V.-P., Lumberton, N. C.

Tenn., Chattanooga.—Heaters, Patterns, Stoves, etc.—Boaz Emergency Mfg. Co., Wm. B. Boaz, Prest. and Mgr., 2427 Central Ave., Hamilton, O., proposes building plant to manufacture heaters, stoves, patterns, castings, etc.; will erect 60x40 and two 200x50-ft. buildings with own force; fireproof concrete construction; metal windows and sash; install foundry equipment, cupolas, traveling cranes, woodworking machinery, etc.; W. B.

Boss was lately noted to build plant for manufacturing heaters. (See Machinery Wanted—Foundry Equipment, etc.)

Va., Basic—Electric Generators, Motors, etc.—Price Electric Devices Corp., Waynesboro, Va., will manufacture lighting and ignition generators, starting motors, battery-charging outfits and automatic cut-out switches; W. G. Ellison, Prest.; F. F. Freed, V.-P.; E. L. Eakle, Secy.-Mgr. (In Nov., under Miscellaneous Factories, noted chartered, capital \$100,000.)

Va., Phoebus—Stoves.—Freed Heater Co., A. H. Pearson, Mgr., Collegeville, Pa., offices in Philadelphia, purchased Sayre Iron Works; will establish branch plant; install machinery costing \$15,000 for manufacturing heaters.

Va., Richmond.—Machine Shop.—Richmond Forgings Corp. will build machine shop to manufacture dies; mill construction; 50x100 ft.; cost \$8000; machinery purchased; Richmond Structural Steel Co. of Richmond is Contr. and Archt.

GAS AND OIL ENTERPRISES

D. C., Washington.—Gas-lighting Plant.—Georgetown Gas Light Co., 1339 Wisconsin Ave. N. W., will install gas pipe system; 53½ mi. 2, 3, 4, 6, 8, 10, 12 and 16-in. piping; Thos. F. Holden, Engr.; lately noted planning \$150,000 bond issue, to extend mains, etc. (See Machinery Wanted—Piping.)

La., Crichton.—Lake Charles Production Co., capital \$30,000, organized with C. E. Berdon, Prest., Lake Charles; Harry Blum, V.-P., Crichton, La.; M. J. Muller, Secy.-Treas., Lake Charles; will develop oil wells in Crichton field, Red River parish.

Okla., Okmulgee.—King Drilling Co., capital \$10,000, Incptd. by Frank W. King, E. W. Kimbley and Walter D. Elrod.

Okla., Bartlesville.—Barlas Oil Co., capital \$20,000, Incptd. by Mark U. Weber, Theo. G. Barlas and C. E. Allen.

Okla., Enid.—Gas Plant.—City voted to grant gas franchise to Enid Electric & Gas Co.; gas to be supplied by Oklahoma Natural Gas Co., which expects to complete pipe line from Blackwell fields to Enid by July 1.

Okla., Quinton.—Gas-pipe Line.—City voted to grant gas franchise to Western National Gas Co.; will pipe natural gas.

Okla., Lawton.—Rosedale Oil & Gas Co., capital \$25,000, Incptd. by Wm. A. Rogers of Tulsa, Okla., and L. E. Turben, Henry J. Cassin and J. A. Lenertz of Lawton.

Okla., Oklahoma City.—Elite Oil Co., capital \$5000, Incptd. by J. C. Davis, J. T. Morehead and H. N. Boardman.

Okla., Pauls Valley.—Pee Wee Oil & Gas Co., capital \$10,000, Incptd. by Roy E. Burks, U. S. Allender, Perry L. Sullivan and others.

Okla., Sapulpa.—Oil Refinery.—Sapulpa Refining Co. will vote on increase in capital from \$1,100,000 to \$1,350,000.

Okla., Tulsa.—Oil Refinery.—J. S. Cosden & Co. will increase oil-refining capacity by 25 per cent. in 1916.

Okla., Tulsa.—Seaboard Oil Co., capital \$15,000, Incptd. by John B. McDonald, H. W. Randolph and John A. Weaver.

Okla., Tulsa.—Beland Oil & Gas Co., capital \$25,000, Incptd. by David Arlitt and F. R. McKee of Muskogee; John M. Thacher of Kansas City, Mo., and Robert L. Lockwood and Jno. P. Cappeau, Jr., of Tulsa.

Tenn., Lonsdale.—Gas Plant.—Knoxville Gas Co., Knoxville, Tenn., is considering extension of gas mains to Lonsdale.

Tex., El Paso.—Rio Grande Oil Co., capital \$20,000, Incptd. by J. Y. Canon, L. E. Lockhart, Dan M. Jackson and others.

Tex., Hondo.—Hondo Oil Co. Incptd. by Joe Fohn, Isaac Wilson and E. A. Parsons.

Tex., Lampasas.—Kempner Oil & Development Co., capital \$10,000, Incptd. by H. N. Key, J. F. White and J. E. Hughes.

Tex., Wichita Falls.—Clara Oil Co., capital \$10,000, Incptd. by W. F. Hamming, R. A. Furlow and E. D. Snyder.

W. Va., Cameron.—Loudenville Oil & Gas Co., capital \$100,000, Incptd. by J. B. Allison, W. H. Loper, James Wilson and Geo. R. Watson of Cameron and Timothy Ross of Waynesburg, Pa.

W. Va., Huntington.—Gasoline.—E. W. Clark & Co., bankers, Philadelphia, Pa. (represented by G. L. Estabrook), plan establishment in Lincoln county of plant to manufacture gasoline; estimated cost of plant, \$100,000.

W. Va., Marion County.—United Oil & Gas Co., capital \$50,000, Incptd. by E. O. Bartlett,

E. M. Sheehan, Ray Sheehan and others, all of Pittsburgh, Pa.

W. Va., Ritchie County.—Adelphia Oil & Gas Co., 1035 Commercial Trust Bldg., Philadelphia, Pa., Incptd. with \$50,000 capital by Clarence Moore, Wm. Morrow, Frank R. Arthurs and others, all of Philadelphia, Pa., to develop oil and gas property in Ritchie County.

W. Va., Toll Gate.—Toll Gate Oil & Gas Co., capital \$25,000, Incptd. by H. C. Stine of Spring of Toll Gate, Wm. Flanagan, Pennsboro, W. Va.; J. W. Dotson of Greenwood, W. Va., and others.

HYDRO-ELECTRIC PLANTS

Ga., Cedartown.—Georgia Ry. & Power Co., Atlanta, will extend electrical transmission service to Cedartown for all purposes requiring electric power.

N. C., Badin.—Tallassee Power Co., capitalization \$1,000,000, principal office at Bryson City, N. C., and Arthur V. Davis, managing official, 2400 Oliver Bldg., Pittsburgh, Pa., purchased (at about \$5,750,000) properties of Southern Aluminum Co. at Narrows of Yadkin River; properties include partially-completed hydro-electric development; planned to generate 70,000 K. W.; purchaser controlled by Aluminum Co. of America (main office at Pittsburgh), mentioned several months ago as completing negotiations to acquire Southern Aluminum Co.; latter's plan was to use this development of electric power for aluminum works it was constructing; Hardaway Contracting Co., Columbus, Ga., original contractor for dam and powerhouses, is resuming construction with intention of completing dam within 12 months; construction plans changed so that present power house will be dismantled and replaced by another of later type on west side of river, requiring excavation 400,000 cu. yds. rock and earth; this excavation contract sublet to Rinehart & Dennis Co., Charlottesville, Va.; reports state further plans provide for constructing steel reinforced concrete building to cover 20 acres; Aluminum Co. of America will complete the aluminum works and the Electro-Chemical Co. (affiliated with Aluminum Co. of America) will own electro plant. (Southern Aluminum Co. was organized and controlled by French capitalists, details of plans frequently stated heretofore, who ceased construction because of European war; their plans involved investment of \$10,000,000.)

ICE AND COLD-STORAGE PLANTS

Fla., Tampa.—Company organized with Jos. Mizell, Prest., Arcadia, Fla., will erect \$25,000 brick building for cold-storage and refrigerating plant. (See Canning and Packing Plants.)

Ga., Chickamauga.—Crystal Springs Bleaching Co. may build ice plant.

Ga., Macon.—Acme Brewing Co. will increase daily capacity of ice plant from 50 to 100 tons; will install machinery.

N. C., Statesville.—Iredell Ice & Fuel Co. organized with A. L. Butler, Prest.; E. D. Vaughn, V.-P.; Robt. M. Hanes, Secy.-Treas.; all of Winston-Salem; will install 25-ton ice plant. (Lately noted Incptd. with \$10,000 capital.)

Okla., Fairview.—Willis Bros. Ice Co., capital \$5000, Incptd. by Thos. E. Willis and W. E. Willis of Fairview and H. Clay Willis of Wichita, Kans.

Tenn., Waverly.—Waverly Mfg. Co. contemplates installation ice plant, 10 to 20 tons daily capacity, to be operated in connection with local water-works and electric-light plant. (See Machinery Wanted—Ice Machine.)

Tex., Sour Lake.—Sour Lake Ice & Light Co. will be Incptd. by F. H. Carpenter and others to operate combined ice and electric-light plant; is having plans prepared for brick or cement building; purchased 25-ton ice plant from York Mfg. Co., York, Pa.; total estimated cost \$40,000. (Mr. Carpenter lately noted to have organized company, etc.)

Tex., Sulphur Springs.—Crystal Ice Co. will build fireproof cold-storage plant; let contract Gilsonite Construction Co., St. Louis, Mo. (Lately noted to have increased capital from \$25,000 to \$35,000.)

Va., Marshall.—Geo. N. Speiden & Co. may install ice plant for produce store. (See Machinery Wanted—Ice Plant.)

IRON AND STEEL PLANTS

Ala., Birmingham.—Steel Plate Work.—Inalls Iron Works Co., R. L. Ingalls, Prest., will build addition to plant; steel, fireproof construction; cost, with equipment, about \$50,000; purchased and will install electric

locomotive train; manufacture plate work, including towers, boiler material, ladles, etc.; continue manufacture of structural steel and iron, etc., in present building.

La., New Orleans—Rolling Mill.—New Orleans Steel & Iron Co., 610 Audubon Blvd., organized with \$100,000 capital; B. W. Deidel of Seidel & Gross Manufacturing Co., Prest.; Chas. Bedell (of Bedell Iron Works), V.-P.; W. L. Poer (of Poer & Co., Inc.), Treas.; D. J. Relley, Secy.; will build rolling mill to have monthly capacity of 1500 tons; raw material to be scrap iron and junk assembled in New Orleans.

Tex., Beaumont—Iron Furnaces, Steel Plant, etc.—Texas Steel Co., authorized capital \$2,500,000, will be incorporated; trustees, S. G. Burnett (Chrmn.), M. Guiterman, T. S. Reed, Jr., John L. Keith and C. T. Heisig; plans involve development 5700 acres iron land, owned by L. P. Featherstone of Longview, Tex.; constructing railroad to ore fields, build iron furnaces, construct steel plant, etc.; first plant to have daily capacity 300 tons iron and cast-iron water, gas and sewer pipe. L. P. Featherstone wires Manufacturers Record: "Beaumont people have subscribed \$1,500,000 and provided 200 acres high-ground site for plant, with deep-water frontage and connections by inland waterway canal with Mississippi and with Warrior Rivers; remaining \$1,000,000 of stock is now being assigned to Eastern and Alabama steel manufacturers and to other citizens of Texas." (This corporation proposes development of the Cass, Marion and Upshur county ore deposits and developing an iron and steel industry on the Gulf coast; particulars of the deposits and possibilities for iron and steel manufacturing previously detailed by Manufacturers Record.)

LAND DEVELOPMENTS

Ala., Mobile—Harrietta Improvement Co. organized with H. A. Etheridge, Prest., Atlanta, Ga.; D. Hill, V.-P.; Dundee, Ill.; W. H. Allen, Secy., Atlanta, Ga.; G. F. Arvedson, Treas., Carpentersville, Ill.; purchased 9000 acres fronting on Mobile River, and will develop; plans to build town to be known as Harrietta; clear and plant 200 acres in Satsumas; Everett & Boykin are reported to build sawmill at new townsite.

Fla., Jacksonville—Citrus Land Co., capital \$10,000, inceptd.; R. L. Ivey, Prest.; W. J. Kelly, V.-P.; E. G. Trenholm, Secy., Treas.

Fla., Miami—Biscayne Bay Front Realty Co., Inc.; R. Reid, Prest., arranged \$100,000 bond issue; will develop bay-front land for building sites; construct seawalls, sewers, streets, sidewalks, water-works, etc.

Fla., West Palm Beach—Everglades Land & Cattle Co., capital \$10,000, inceptd.; B. F. Vaughan, Prest., Treas.; Stanton Walker, V.-P.; Ada C. Vaughan, Secy.

Ky., Louisville—Beverly Farms, capital \$55,000, inceptd., by W. E. Mortimore, G. J. Rehert and G. W. Norton.

N. C., Seminole—Seminole Development Co., capital \$4000, inceptd. by John B. Wiggins, Harry C. Maley, Elmer E. Buchan and Bayard W. Barton.

Tenn., Nashville—Moore Development Co., 303½ 2d Ave. N., organized; J. C. Collins, Prest.; R. C. Moore, Secy.; W. A. Batten, Supt.; will develop 200 acres on Caney Fork River, Warren county. (Lately noted inceptd., capital \$10,000.)

Va., Hopewell—Appomattox Cemetery Corp., capital \$50,000, chartered; L. W. Rolfe, Prest.; S. W. Fulford, Secy.

Va., Hopewell—Hopewell Terrace Corp., W. Sachs, Prest., will develop 97½ acres; cement sidewalks, graded streets, and water; open bids in about 30 days; J. H. Starkey, 617 Mechanics' Bldg., Petersburg, Engr. (Lately noted chartered, capital \$25,000.)

Va., Roanoke—Lake-Mont Park Corp., H. H. Markley, Prest., will develop 360 acres (White Hall Farm) in Prince George county as residential section; divide into lots; construct sewer, water-works and sidewalks. (Lately noted inceptd. with \$100,000 capital.)

LUMBER MANUFACTURING

Ala., Attalla—J. G. Dunn will establish sawmill on timber tract in Wills Valley.

Ala., Mobile—Everett & Boykin are reported to build sawmill at Harrietta, new townsite to be developed by Harrietta Improvement Co. (See Land Development.)

Ala., Selma—Birmingham Lumber Co. purchased through E. Carlisle Jones, Selma, 40 acres timber land; reported to build planing mill and dressing plant.

Ark., Rush—Ambrose Estes contemplates installing sawmill.

Fla., Clermont—West Virginia-Florida Co., capital \$75,000, inceptd.; U. S. G. Anderson,

Prest.; S. J. Trice, V.-P.; S. H. Bowman, Secy.-Treas.

Fla., Hilliard—Conner-Davis Lumber Co., capital \$45,000, inceptd.; J. J. N. Conner, Prest.; T. H. Davis, V.-P.; C. C. Conner, Secy.-Treas.

Fla., Kissimmee—Central Lumber & Supply Co., capital \$100,000, organized with Sam G. Ragsdale, Prest.; Paul McKee, V.-P.; Otto Stevens, Secy.-Treas.; purchased South Florida Lumber Co.

Ga., Savannah—Hilton-Dodge Lumber Co., capitalized at \$8,000,000, Southern Seaboard Lumber Corp. and Great Eastern Lumber Co. are reported to be merged by New York capitalists; properties said to include 530,000,000 ft. timber near Savannah in Georgia and South Carolina, 250,000,000 ft. timber on other land near Savannah, mills in Georgia and South Carolina, etc.; R. H. Knox and Geo. S. Lewis, Savannah, are receivers for Hilton-Dodge Co.

Ky., Mayking—Coeburn Lumber Co., Whitesburg, Ky., will build circular mill; daily output 10,000 ft. lumber; erect \$3000 buildings; has purchased mill equipment. (Lately noted purchasing timber tracts for development.)

Miss., Natchez—Sycamore Mill is reported to double capacity of mill, increasing output from 20,000 to 40,000 ft. daily.

N. C., Asheville—Boner Mills Lumber Co., capital \$10,000, inceptd. by C. H. Boner, W. J. Mills and Junius G. Adams.

N. C., Vanceboro—John L. Robinson is reported interested in plan to build large lumber mill.

Tenn., Puryear—Puryear Lumber & Undertaking Co., capital \$5000, inceptd. by W. D. Kelly, D. F. West, L. Hooper and others.

Va., Clintwood—Geo. H. Holmes of Windsor, Canada and Pikesville, Ky., purchased timber land in Dickenson county, and will build sawmills for development.

Va., Grundy—Open Fork Lumber Co., capital \$100,000, inceptd.; E. R. Boyd, Prest.; John W. Flannagan, Jr., Secy.; both of Grundy; C. W. Boyd, V.-P., Richlands, Va.

Va., Lynchburg—Stevenson Lumber Co., capital \$50,000, inceptd.; Frank Stevens, Prest.; J. Edward Taylor, Secy.-Treas.

Va., Richmond—Thomas E. Stagg & Co., capital \$15,000, inceptd.; Thos. E. Stagg, Prest.; L. Stagg Powell, Secy.-Treas.

Va., Roanoke—Acorn Lumber Co., capital \$30,000, inceptd.; G. M. Huffman, Prest.; F. B. Schultz, Secy.

W. Va., Sutton—Ed and Geo. Marple will develop Fisher tract of timber on Cedar Creek; build incline.

METAL-WORKING PLANTS

Md., Baltimore—Tubing.—Baltimore Tube Co. has monthly capacity 1,000,000 lbs.; in March will install machinery to double output; product, seamless brass and copper tubing; will soon consume copper at rate of 25,000,000 lbs. annually; orders on file include 7,000,000 lbs., 50 per cent. being for munition purposes. (Lately noted inceptd. with \$5,000,000 capital stock, succeeding company of same name; Chas. S. Morse, Prest.)

Md., Elkton—Bolts.—Nutless Bolt Mfg. Co., inceptd. by Clement M. Egner and associates.

Mo., St. Louis—Metal.—Bytanic Metal Co., capital \$15,000, inceptd. by W. S. Bremner, W. L. Allen, Lewis B. Tebbetts and Alva C. Trueblood.

N. C., Badin—Aluminum.—Aluminum Co. of America, E. S. Flickes, Ch. Engr., Pittsburgh, Pa., is understood to have decided upon plans for completing aluminum works partially constructed by Southern Aluminum Co., for whose properties negotiations were completed several months ago; hydro-electric development will be completed by Tallahassee Power Co., principal office at Bryson City, N. C., Arthur V. Davis, managing official, 2400 Oliver Bldg., Pittsburgh; this corporation (controlled by Aluminum Co. of America) has taken over the partially completed hydro-electric plant at about \$5,756,000; original plans call for 70,000-k. w. power-house, 400 electric furnaces, 600x600-ft. alumina reduction house, etc., requiring total investment of \$10,000,000. Reports state further plans provide for constructing steel reinforced concrete building to cover 20 acres; the Electro-Chemical Co. (affiliated with Aluminum Co. of America) will own electro plant. (See Hydro-Electric Plants.)

N. C., Canton—Aluminum Dinner Pail—Union Mfg. Co. let contract S. D. Hall, Asheville, to erect factory and office building; 1 story; reinforced concrete.

Tex., Dallas—Steel and Wire.—Texas Key-Steel & Wire Co., in Dec. noted inceptd., capital \$20,000, by P. W. Sommer, H. G. Moore

and others, is distribution branch for Keystone Steel & Wire Co. of Peoria, Ill., of which Mr. Sommer is Prest. and Mr. Moore Gen. Sales Mgr.

W. Va., Dunbar—Vacuum Milk Cans.—Vacuum Milk Can Co. advises will erect by company's force a 250x100-ft. brick and steel building, cost \$25,000; has purchased machinery (stamping machinery, etc.); will manufacture vacuum milk cans; U. G. Fletcher, Prest. and Mgr.; Solon Fletcher, Secy. (Incorporation and additional plans noted in Oct.)

MINING

Ark., Rush—Zinc.—R. M. Fletcher of Pine Bluff, Ark., and J. S. Howell of Pinnacle, Ark., purchased zinc-mining property in Rush Dist. and will develop; Mr. Howell is Gen. Supt.

Ga., Gordon—Kaolin.—Savannah Kaolin Co., 307 Savannah Bank & Trust Bldg., Savannah, Ga., will establish plant to develop 325½ acres; daily capacity, 100 tons washed kaolin and 100 tons crude kaolin; F. H. Op. Box 569, Savannah, is temporary treasurer; W. F. Simmons, Mining Engineer, S13 Georgia Life Bldg., Macon, Ga., and W. S. Deidrich, also of Macon, are construction engineers; noted in Sept. (See Machinery Wanted—Kaolin Plant Equipment.)

Ky., Clay City—Lime.—J. M. Kennon will develop crystalized lime deposits.

Ky., Paducah—Clay.—Paducah Clay Co. increased capital from \$4000 to \$12,000; mines clays for potters, tilemakers and refractories; 1 to 3 cars daily; is installing hoisting machinery to include \$1400 derrick and engine.

Md., Elkton—French Clay Blending Co., capital \$5000, inceptd. by Clement M. Egner and associates.

Md., Elkton—Old Eureka Mining Co. incorporated by Clement M. Egner and associates.

Mo., Wentworth—Lead and Zinc.—Mrs. Margaret Simpson and others are reported to build 200-ton concentrating plant.

Mo., Joplin—Zinc.—Sullivan Zinc Mining Co., 307 Miners' Bank Bldg., organized; R. D. Talmage, Mgr.; will develop 20 acres; install 150-ton mill; remove equipment from Zinc, Ark., to Joplin. (Lately noted inceptd. with \$50,000 capital.)

Okla., Lincolnville—Red Eagle Mining Co., capital \$8000, inceptd. by Roy Bingham, J. J. Bingham, P. L. Allen and others.

Okla., Oklahoma City—Arkola Mining Co., capital \$3000, inceptd. by Chas. L. Harris and E. B. Harris of Oklahoma City, W. D. Glass, J. L. Glass and E. J. Glass of Delaney, Ark.

Okla., Woodford—Asphalt.—A. Schneider of New York is reported as contemplating development of asphalt deposits.

Tenn., Johnson City—Kaolin and Talc.—Jas. A. Martin may develop kaolin and talc; has located both materials.

Tenn., Lone Mountain—Zinc.—Sam'l. P. Wetherill, 600 Morris Bldg., and associates, all of Philadelphia, Pa., and New York capitalists are reported as follows: Purchased 11,000 acres Hancock county zinc property; plan developments to include building industrial city; contemplates zinc plant with daily capacity 10,000 tons; also construction 26-mi. railroad from Southern Ry., 2 mi. south of Lone Mountain, to Sneedville and later to Speers Ferry, Va., 12 mi. distant. Mr. Wetherill wires Manufacturers Record: "The Tennessee zinc property is a prospect, now under examination, entirely undeveloped." Later Mr. Wetherill writes to Manufacturers Record: "Deal has not been closed; deeds in escrow pending decision after full examination of property; distance from railroad and expense involved necessitate thorough investigation. Engineers and drills now on property. No company formed, and our future action cannot be outlined at present."

Tenn., Nashville—Zinc, etc.—Tennessee Zinc Corp., capital \$10,000, inceptd. by R. B. Herzer and F. B. Shirley of Nashville, C. E. Hendrick of Harriman, Tenn., and others.

Va., Radford—Stone, etc.—Southwestern Stone & Lime Co., capital \$100,000, inceptd.; A. E. Carper, Prest.; W. F. McElrath, V.-P.; J. A. McLemore, Secy.-Treas.; all of East Radford.

Va., Bedford City—Manganese.—Deerwood Manganese Mining Corp., R. O. Morden, Secy., care of Morden Land & Loan Co., Palace Bldg., Minneapolis, Minn., is progressing with Bedford county manganese development; 282 acres; states the deposit is high-grade manganese ore in vein formation; shaft down 200 ft. and have 20-ft. vein solid ore; begin producing about Mch. 15; may purchase additional equipment. (See Machinery Wanted—Mining Machinery.)

MISCELLANEOUS CONSTRUCTION

Ark., Rogers—Mausoleum.—E. T. Dimick will build mausoleum in city cemetery.

Fla., Dunedin—Dock.—Town will construct dock; bids until Feb. 4; Jos. N. Drew, Engr.; W. Y. Douglass, Town Clerk. (See Machinery Wanted—Dock.)

Ga., Atlanta—Underpass.—Council Finance Committee appropriated \$5422.60 to build underpass on North Blvd. at Piedmont Park. (See Bridges, Culverts, Viaducts.)

Ky., Louisville—Government Dam.—Government progressing with construction dam across Ohio River, below Louisville, as follows: Lock No. 42, 26 mi. below Louisville, under construction for 2 yrs., will probably be completed in 2 yrs. from present time; Lock No. 48, 16 mi. below Evansville, Ind., under construction 4 yrs., will require at least 2 additional yrs. for completion; Ohio River improvement project contemplates 12 dams below Louisville, but funds are available for Nos. 43 and 48 only; J. C. Oakes, Maj., Corps of Engrs., U. S. Engineer Office, War Dept., Room 425, Louisville.

Md., Baltimore—Pier and Shed.—G. H. Young Co. invites following bidders to estimate on erection reinforced concrete pier and shed: Andrew Miller Co., St. Helena, Md.; Singer-Pentz Co., 600 Equitable Bldg.; Raymond Concrete Pipe Co., 425-427 Munsey Bldg.; Consolidated Engineering Co., 213 Calvert Bldg.; Oscar F. Lackey, 2904 N. Calvert St.; all of Baltimore; plans by Chas. M. Anderson, 324 N. Charles St., Baltimore.

Md., Sparrows Point—Heating Plant.—Maryland Steel Co. let contract to Enterprise Steam & Hot Water Heating Co., 600 N. Howard St., Baltimore, Md., to install heating plant for 2 new shops; 3 blower systems operated by 3 steam-driven engines.

Mo., Kansas City—Ice-skating Rink.—W. B. Craig, Gen. Mgr. Missouri Valley Cold Storage Co., 550 Walnut St., will build 210x85-ft. indoor ice-skating rink costing \$75,000; open construction bids about June 1; Mcandish Engineering Co., Engr., Kansas City; lately noted to build rink, etc. (See Machinery Wanted—Ice-skating Rink.)

Tenn., Memphis—Subways.—Chicago, Rock Island & Pacific Ry. (C. A. Morse, Ch. Engr., Chicago); St. Louis, Iron Mountain & Southern Ry. (E. A. Hadley, Ch. Engr., St. Louis, Mo.), and St. Louis, Southwestern Ry. (C. D. Burdon, Ch. Engr., St. Louis, Mo.) undertaking grading preparatory to construction subways at Pennsylvania and Indiana Aves. for tracks leading to Harahan bridge; concrete and steel construction; Weaver-Weeks Construction Co., Springfield, Mo., has contract for both subways and expects to have grading completed by Feb. 1; Pennsylvania Ave. structure will eventually have 30 railroad tracks across its 360-ft. width; at first will have 4 tracks leading to bridge and several tracks leading to Rock Island yards; estimated cost when finally completed, \$25,000 to \$250,000; first part of structure to cost \$100,000; cost of Indiana Ave. subway, \$100,000.

Va., Sewalls Point—Coal Pier.—H. Fernstrom, Ch. Engr. Virginian Ry. Co., Norfolk, writes to Manufacturers Record: "In regard to 400-foot extension to coal pier, I am not at this time in a position to give information; matter has not been finally disposed of." (Lately reported as planning to build 400-ft. pier extension.)

MISCELLANEOUS ENTERPRISES

Ala., Anniston—Hardware.—Landham Hardware Co., capital \$5000, inceptd. by J. E. Landham and others.

Ala., Birmingham—Construction.—General Construction Co., capital \$10,000, inceptd.; W. C. Cocke, Prest.; S. Coplan, Secy.; J. B. Goodwin, V.-P.

Ala., Birmingham—Plumbing.—Evans Plumbing Co., capital \$2000, inceptd.; A. H. Evans, Prest.; L. J. Mancin, Secy.-Treas.

Ala., Tuscaloosa—Cattle—Moon Lake Cattle Co., capital \$20,000, inceptd. by Fleetwood Rice, C. B. Vernon and H. J. King.

Ark., Beebe—Printing.—White County News will rebuild burned plant.

Fla., Kissimmee—Livestock.—Osceola Cat Co., capital \$250,000, inceptd.; P. K. Weaver, Prest.; D. G. Wagner, V.-P.; G. P. Garrett, Secy.-Treas.

Fla., Sarasota—Contracting.—United Asphalt & Construction Co., capital \$10,000, inceptd.; B. R. Reno, Prest.; J. W. Conrad, V.-P. and Treas.; J. B. Chapline, Secy.

Ga., Atlanta—Laundry.—Capital City Laundry is having plans prepared by Walker & Chase, 533 Candler Bldg., Atlanta, for laundry building; brick; flat roof; steam heat.

Ga., Lafayette—Creamery.—Walker County Co-operative Creamery Co., capital \$5000, or

ganized to establish creamery; J. F. Johnson is interested.

Ga., Macon—Dairy.—Swift Creek Dairy Farm will remodel by day labor a former distillery building of iron-clad construction with concrete walls and wooden frame; install dairy appliances; present capacity about 100 cows. (Lately noted inceptd., capital \$2500, by A. Block and N. M. Block.)

Ky., Louisville—Optical.—State Optical Co., capital \$2000, inceptd. by J. M. Fine, Mrs. Dora Fine and Sam Berkowitz.

Ky., Louisville—Publishing.—Crain Publishing Co., capital \$2500, inceptd. by G. D. Crane, Jr., Frank L. Dugan and J. J. Kavanaugh.

Md., Baltimore—Heating Plants.—Rector Columbia Heating Co., capital \$50,000, inceptd. by John E. Semmes, Jr. (825-828 Equitable Bldg.), Arthur W. Norton and Lee Marshall.

Md., Baltimore—Barges, etc.—Transportation.—Northern Transportation Co., capital \$1,500,000, inceptd. by John T. Donohue, John T. Donohue, Jr., Thos. J. Donohue and Wm. L. Donohue; to operate barges, etc. (1600 to 3500 tons) between Baltimore and New England, Florida and Gulf Coast.

N. C., Raleigh—Contractors and Engineers.—Raleigh Engineering & Construction Co., 1107 Citizens' National Bank Bldg., inceptd.; R. W. Kennison, Prest.; C. V. York, V.-P.; J. S. Thompson, Secy.; conduct general engineering and construction for railroads, harbors, municipal improvements, drainage and highways, etc.

N. C., Swan Quarter—Boat Line.—New Holland Boat Line, capital \$10,000, inceptd. by J. P. Kerr of Raleigh, Douglas N. Graves of Boston, Mass.; O. B. and C. B. Spencer of Swan Quarter, N. C.; will operate boat line between points in Hyde and Beaufort counties.

Okla., Okarche—Grain Elevator.—Farmers' Co-operative Assn., Oscar Dow, Mgr., will build 20,000-bus. grain elevator; fireproof from outside; will install 25 H. P. fuel-oil engine.

Tenn., Memphis—Grain Elevator.—Gillette Grain Co., Nashville, Tenn., will build grain elevator to cost \$40,000.

Tenn., Memphis—Printing.—Harry Dixon Printing Co., capital \$100,000, inceptd. by Harry Dixon, Clarence P. Boals, Marion Griffin and others.

Tenn., Livingston—Hardware.—Arnold Hardware Co., capital \$12,000, inceptd. by R. B. Arnold, A. J. Mofield, J. A. Hargrove and others.

Tex., Beaumont—Cattle.—Gilbert Cattle & Pasture Co., capital \$30,000, inceptd. by John N. Gilbert, W. C. Gilbert, L. F. Gilbert and others.

Tex., Wills Point—Hardware.—Montague Hardware Co., capital \$5000, inceptd. by C. J. Montague, W. B. Wynne and J. E. Owens.

Va., Ashland—Farmers and Builders' Supplies.—Farmers & Builders' Supply Co., capital \$25,000, inceptd.; Herbert Bumpass, Prest.; Andrew J. Ellis, Secy.

Va., Hopewell—Hardware.—Reliable Hardware Co., capital \$5000, inceptd.; Albert Watson, Prest.; Gustave Jacobson, Secy., both of Richmond.

MISCELLANEOUS FACTORIES

Ala., Birmingham—Tires.—Thornton Tire Co. inceptd. by P. G. Thornton and others.

Fla., Greenland—Fireproof Material.—Greenland Town & Improvement Co. is having plans prepared by M. C. Greeley of Jacksonville, Fla., for plant to manufacture fireproof material; cost about \$50,000.

Ga., Atlanta—Spring Beds.—Hirsch-Spitz Mfg. Co. let contract Walker & Co. to erect addition; 15x40 ft.; concrete; cost \$2000; install machinery to clean cotton. (Lately noted.)

Ga., Augusta—Candy.—Hollingsworth Candy Co. let contract Woodward & Mabley of Augusta to erect third story to plant; cost of construction, \$3000; total cost, including elevator and 25 H. P. steam engine, \$10,000; plans by G. Lloyd Preacher, Augusta. (Lately noted.)

Ga., Columbus—Syrup Refinery.—Hardaway-Cargill Co. advises will transfer present equipment to new plant, with some improvements; will erect fireproof building; plans now being prepared by T. W. Smith, Columbus. (New building lately noted to be of brick; cost \$15,000 to \$20,000.)

Ga., Cogdell—Timber Products.—Timber Products Co., capital \$5000, inceptd. by Alex. K. Sessions of Cogdell, D. G. Gale, Jr., of New York and others.

Ga., Griffin—Brooms.—W. B. Royster, Secy., Mgr. Griffin and Spalding County Board of Trade, interested in plan to establish broom

factory; minimum daily output, 50 doz. (See Machinery Wanted—Broom Machinery.)

Ga., Macon—Storage Batteries.—Macon Electric Storage Battery Co., capital \$100,000, inceptd. by J. L. Edwards, H. S. Edwards and M. R. Edwards. (Mr. Edwards lately noted to establish plant to manufacture storage batteries; occupy building to be erected by Herbert F. Haley at Oglethorpe and 3d Sts.; 1 story; 27x32 ft.; concrete and brick; cost \$3000; Curran R. Ellis, Archt., Macon; R. H. Smalling & Sons, building contractors.)

Ga., Rome—Farm Equipment.—Farm Equipment Co., capital \$30,000, inceptd. by W. H. Fowler, B. J. Wright and John Camp Davis.

Ga., Thomasville—Peanut Oil.—Camilla Cotton Oil & Fertilizer Co. contemplates installing press to extract peanut oil.

Ga., Valdosta—Peanut Oil.—Valdosta Oil Mill contemplates installing machinery to extract peanut oil.

Ky., Frankfort—Chemicals.—American Chemical & By-Products Co., authorized capital \$3,750,000, inceptd. by B. G. Williams of Frankfort; Geo. McLeod of Versailles, Ky.; V. J. Howard of Covington; Ky., and J. W. Saunders of Waco, Tex. Mr. Williams wires Manufacturers Record: "Plant cost approximately \$750,000; 50 tons coal per day."

Ky., Kragon—Acetate of Lime, Charcoal, etc.—Kentucky Wood Products Co. acquired additional timber acreage and will enlarge plant; manufactures acetate of lime, charcoal, etc.

Ky., Lexington—Cigars.—L. D. Ward Co., 125 Church St., organized with L. D. Ward, Prest., Nicholasville, Ky.; John J. Ward, V.-P.; Chas. H. Rice, Mgr.; both of Lexington; will manufacture cigars; will not erect building at present. (Lately noted inceptd. with \$10,000 capital.)

Ky., Maysville—Syrup.—Maysville Syrup Co. increased capital from \$50,000 to \$75,000.

Ky., Richmond—Tobacco.—Bensley-Garrett Tobacco Co., capital \$15,000, inceptd. by W. R. Bensley, Wm. L. Wallace and C. C. Wallace.

Ky., Winchester—Underwaists.—Premier Mfg. Co., capital \$15,000, organized by H. Green Garrett, W. L. Cotton, J. H. Hardwick and others; will install 20 machines and manufacture children's underwaists.

La., New Orleans—Corrugated Fiber Boxes, N. O. Corrugated Fiber Box Factory, Inc., capital \$25,000, chartered; Morris Levy, Prest.; Max Schwabacher, V.-P. and Tres.; Julius H. Oppenheim, Secy.

Md., Baltimore—Bulkhead.—City will construct timber bulkhead along east side of Harris Creek Dock, southward from Boston St., distance 100 ft.; bids until Jan. 26; H. K. McKay, Harbor Engr. (See Machinery Wanted—Bulkhead.)

Md., Baltimore—Overalls, etc.—Wise Bros., 132 W. Fayette St., let contract Price Concrete Construction Co., 225 St. Paul St., Baltimore, to build addition; reinforced concrete; 45x182 ft.; 6 stories; plans by Parker, Thomas & Rice, 1109-1111 Union Trust Bldg., Baltimore. (Lately noted.)

Md., Elkton—Turpentine, etc.—Atlantic Turpentine & Pine Tar Co., capital \$100,000, inceptd. by Clement M. Egner and associates.

Md., Security—Potash.—Security Cement & Lime Co. contemplates manufacture of potash from cement stone; wires Manufacturers Record: "Our raw material used in cement manufacture contains small amount of potash; we are investigating methods of recovering this; not yet in position to furnish details."

Miss., Columbus—Creamery.—Company organized by A. H. Taylor, Mgr. Okolona Creamery Co., Okolona, Miss., and others to establish creamery; will install machinery to manufacture butter, etc.

Miss., Columbus—Buttons.—F. C. Vetter, E. E. Thomas and others of Muscatine, Iowa, are reported as contemplating establishment of button factory; utilize Tombigbee River mussel shells.

Mo., St. Charles—Shoes.—International Shoe Co. plans to build addition costing \$30,000.

Mo., St. Louis—Gymnasium Supplies.—Fred Medart Mfg. Co. will build plant to cost \$40,000; frontage of site, 162 ft. 8 in.

Mo., St. Louis—Bakery.—Henry Fedder will build bakery and apartment-house; cost \$10,000.

N. C., Greensboro—Cigars.—Lang Cigar Co., capital \$125,000, inceptd. by R. C. Lang, Mrs. E. M. C. Lang and S. Tuttle Lang.

Okl., Ardmore—Peanuts.—Ardmore Oil &

Milling Co. is reported as considering installation of peanut factory.

Okla., Tulsa—Chemicals.—Mid-Continent Chemical Co., capital \$50,000, inceptd. by R. O. Stull, J. H. Crocker and H. A. Gibson.

Tenn., Cookeville—Egg Cases.—Nashville Egg Case & Filler Co., organized with G. A. Maxwell, Prest.; J. N. Cox, V.-P.; A. G. Maxwell, Mgr.; R. L. Farley, Secy.-Treas.; acquired established factory.

Tenn., Kingsport—Hydrated and Lump Lime.—John A. Miller, Nazareth, Pa., Prest. of Clinchfield Portland Cement Corp., advises Manufacturers Record: Hydrated lime plant designed to have capacity 50 tons quick or agricultural, or hydrated lime, at rate 4 tons per hour; in addition, from 8 to 10 tons ground limestone rock (for agricultural use) per hour; to have this plant completed within 6 months; propose to build electric-power distributing station, 7000 to 10,000 k. w. h. capacity; several large enterprises already closed contracts for requirements; this development will take form of extension and enlargement present power plant, which supplies electricity required in our cement plant; L. L. Griffiths, Gen. Supt., Kingsport, can give detailed information. See Electric Plants. (Lately noted to build plant to manufacture lime and hydrated lime, Richard K. Meade, 202 N. Calvert St., Baltimore, Md., to prepare plans and construct 5 upright mills, steel buildings, etc.)

Tenn., Kingsport—Paper Pulp and Paper.—Kingsport Pulp Corp., capital \$650,000, chartered; Edward C. Badly, Secy., White Plains, N. Y. Royal B. Embree and associates lately noted to build mill for manufacturing paper pulp from waste of Kingsport Extract Corp., etc.)

Tenn., Knoxville—Vending Machines.—Whittle-Vinegar Co., 207 Vine Ave. (lately noted inceptd., capital \$20,000) will not manufacture; is placing vending machines.

Tenn., Nashville—Plastering.—Southern Plastering Co., capital \$5000, inceptd. by W. B. Herbert, R. D. Herbert, F. H. Wheeler and others.

Tex., El Paso—Sugar.—A. E. Gauger, agriculturist for Holly Sugar Co., Holly, Col., is reported as contemplating establishment of plant to manufacture beet sugar.

Tex., Crockett—Bakery.—Crockett Grocery & Baking Co. organized; John L. Dean, Prest.; Albert Seaman, V.-P.; T. E. Callier, Secy.-Treas.; Dean & Callier, Mgrs.; install ovens and boiler costing \$600. (Lately noted inceptd. with \$7000 capital.)

Tex., Fort Worth—Linotype Device.—Automatic Tabular Co., capital \$1000, inceptd. by Hanson and A. D. Evans of Fort Worth and Geo. W. Ittner of St. Louis, Mo.

Tex., San Antonio—Wheels.—Simmons Wheel Co., capital \$30,000, inceptd. by Oliver G. Simmons, D. J. Woodward and J. M. West.

Va., Newport News—Marine Railway, etc.—O. A. Bloxom of Battery Park, Va., has grant of 2 tracts land at municipal boat harbor; on one tract, with frontage of 200 ft., will build marine railway to cost, with building and machinery, \$8000; on other tract, with frontage of 100 ft., will build oyster, crab and fish packing plant to cost \$5000. (Company lately noted as contemplating erection of plants.)

Va., Norfolk—Screens.—Pannill Illo Screen Corp., capital \$50,000, chartered; Otto Wells, Prest.; R. A. Gordon, Secy.

Va., Richmond—Bottling.—Lemon-Kola Corp., capital \$25,000, chartered; N. R. Glenn, Prest., Richmond; R. W. Moon, Secy.-Treas., Roanoke.

Va., Richlands—Wood Extracts.—American Leather Mfg. Co., Chas. Grubstein, Secy.-Treas., Newark, N. J., is not planning to establish extract factory. (American Leather Co. and Swift & Co., Chicago, lately reported as planning to establish \$25,000 wood-extract factory.)

Va., Richmond—Distillery.—Tip-Top Distilling Corp., capital \$100,000, chartered; R. L. Sowers, Prest.; J. E. Bass, V.-P.; John H. Waymack, Secy.-Treas.

Va., Roanoke—Candy.—Peerless Candy Co., 205 S. 2d St., purchased site 68x100 ft. and is having plans prepared for candy factory.

Va., Roanoke—Ventilators.—Wilmot Ventilating Co., capital \$50,000, inceptd.; G. T. Greer, Prest.; Mosby Montague, Secy.-Treas.

Va., Roanoke—Locomotive Device.—White American Locomotive Sander Co. inceptd. by W. H. White and others to manufacture combination track sander and pipe cleaner for locomotives.

Va., Suffolk—Peanuts.—Lummis & Co. will rebuild peanut factory reported burned at loss of \$75,000 to \$100,000; temporary offices on second floor Norfolk Southern Bldg.

Va., Waynesboro—Electric Devices.—Price Electric Devices Corp., noted chartered in Nov., capital \$100,000, will operate plant at Basic, Va. (See Foundry and Machine Plants, Va., Basic.)

Va., West Point—Gloves.—West Point Glove Co., A. B. Delmage, Prest.-Mgr., will rent building for glove factory; machinery cost about \$2500; manufacture work leather gloves and mittens and automobile gauntlets; lately noted organized, capital \$15,000. (See Machinery Wanted—Tanners.)

Va., Winchester—Gloves.—Owen & Trenary Glove Co., capital \$25,000, inceptd.; C. T. Owen, Prest.; C. W. Trenary, Secy.-Treas.

MOTORS AND GARAGES

Ala., Birmingham—Automobiles.—A. L. Boorse Motor Co., capital \$15,000, inceptd. by A. L. Boorse, Mrs. Clara A. Boorse and Jessie M. Boorse.

Ala., Montgomery—Automobiles.—Bell-Morris Auto Repair Co. organized by C. M. Morris and J. Bell; will establish automobile and machinery repairing plant at 206-208 Dexter Ave.; purchased machinery.

D. C., Washington—Garage.—James H. and C. W. Orme let contract A. M. Poynton Co., 735 14th St. N. W., to remodel 2-story brick garage at 1620 M St. N. W.; fireproof construction; A. P. Clark, Archt., \$16 14th St. N. W., Washington.

D. C., Washington—Garage.—Mount Pleasant Garage, rear 2014 18th St. N. W., will build 3-story brick garage at 2425 18th St. N. W.; cost \$35,000; W. C. Nichols, Archt., 728 14th St. N. W.; C. L. Burrows, Contr., Mount Pleasant Garage.

D. C., Washington—Garage.—Jos. J. Leahy will build \$75,000 structure for garage, service station and automobile salesroom; 3-story building; 109x150 ft.; exterior of tapestry brick; reinforced concrete; steel sashes; electric elevator; fireproof throughout; to be occupied by Auburn Motor Car Co., H. W. Robertson, Prest., 423 New Jersey Ave. N. W., N. W.

N. C., Paducah—Automobiles.—West Kentucky Automobile Co., capital \$10,000, inceptd. by Hubert Levy and others.

Md., Baltimore—Garage.—Northern Garage Co. purchased site 100x132 ft. on which to build commercial garage; 1 story; 100x125 ft.; brick; plans by Stanislaus Russell, 2900 Clifton Ave., Baltimore.

N. C., Asheville—Automobiles.—Overland Sales Co., capital \$10,000, inceptd. by J. C. Williams, B. H. Williams and N. H. Williams.

N. C., Guin—Automobiles.—Wright Motor Co., capital \$7500, inceptd. by R. R. Wright, Mrs. R. R. Wright and M. L. Shaw.

N. C., Lexington—Garage.—Dermott Shewell let contract D. K. Cecil, Lexington, to erect garage and sales stable; 60x100 ft.; 2 stories; ordinary brick construction; rough texture brick front; tar and gravel roof; cost \$4500; Northup & O'Brien, Archts., Winston-Salem, N. C.

Okla., Cordell—Garage.—L. M. Jones let contract to H. A. Kenner, Cordell, to erect \$3000 50x100-ft. garage; brick, with concrete floor; electric lighting.

S. C., Charleston—Garage.—Clyde Garage & Service Co. will build garage and sales stable; Wallace K. Harley, Prest., Secy., and Treas.; L. K. Legge, V.-P.

Tenn., Knoxville—Model Garage, capital \$20,000, inceptd. by John J. Craig, Robt. L. and W. J. Donaldson, D. J. Boyden and Sam E. Young; secured 3-story brick building, 50x150 ft., and will remodel as garage; will concrete floors.

Tenn., Memphis—Automobiles.—Memphis Motor Car Co. increased capital stock from \$12,500 to \$50,000.

Tenn., Morristown—Garage.—Wm. H. Bestwick, Jefferson City, Tenn., will erect \$30,000 garage on Main St.; 3 stories; 50x100 ft.; fireproof; brick; stone front; built-up roof; steam heat; hand-power elevator; construction by owner. (See Machinery Wanted—Concrete (Reinforced) Construction.)

Tex., Houston—Automobiles.—Southern Motor Co., capital \$1000, inceptd. by Fred J. Burke, M. S. Taggart and Fred H. Burke.

Va., Richmond—Garage.—John B. Biley will build garage; 2 stories; brick; cost \$12,500.

Va., South Boston—Automobiles.—Barbour Buggy Co. will install plant to manufacture automobiles; R. A. Skinner of Detroit, Mich., to be in charge.

W. Va., Clark, P. O. at Northfork—Garage, Garage & Motor Supply Co., capital \$5000, inceptd. by G. H. Wilcox and L. H. Clark of Kyle, W. Va.; Wyndham Stokes, Welch, W. Va., and others.

ROAD AND STREET WORK

Ala., Dadeville.—Tallapoosa County Commissioners will improve 44 mi. roads; 26 ft. wide; cost \$60,000; engineers in charge, J. R. Hall of Dadeville, Ala., and W. W. Robinson, Alexander City, Ala.; let contracts as follows: Stanley & Singer of Lafayette, Ala., 22 mi.; J. R. Allgood, Dadeville, 8 mi.; Nixon-Smith Construction Co., Dadeville, 14 mi.; G. J. Sorrell, Judge of Probate.

Ala., Hamilton.—Marion county will gravel 10 mi. of roads; County Comms. receive bids until Jan. 31; Mack Pearce, Judge of Probate. (See Machinery Wanted—Road Construction.)

Ark., Little Rock.—City will pave 10½ blocks on Park and Wright Aves., Street Improvement Dist. No. 235; brick, sheet asphalt, asphaltic concrete and bitulithic; bids opened Jan. 18; Lund & Hill, Engrs., 527 Southern Bldg., Little Rock; E. N. Pettit, Chrmn. Comms.

Fla., Bradenton.—Manatee county, Sarasota Dist., voted \$250,000 bonds to construct roads and bridges. Address County Commissioners. (Lately noted.)

Fla., Dunedin.—Town will construct about 13,300 sq. yds. paving 14,000 ft. concrete and granite curb, paving drains and inlets; bids until Feb. 4; Jos. N. Drew, Engr.; W. Y. Douglass, Town Clerk. (See Machinery Wanted—Paving.)

Fla., Fellsmere.—Town Com., C. W. Talmadge, Chrmn., will call bids in about 10 days to pave about 5000 lin. ft. Broadway and Pennsylvania Aves.; materials to be decided by Com.; will consider sand asphalt, Ojus rock, coquina rock, marl, shell or combination of materials; F. W. Dole, Secy. Commr. (Lately noted.)

Fla., Miami.—Dade county will construct Tamiami Trail in Special Road and Bridge Dist. No. 2; County Commissioners, Z. T. Merritt, Clerk, receive bids until Feb. 11. (See Machinery Wanted—Road Construction.)

Fla., Sebring.—City voted \$50,000 bonds to pave streets with asphalt. Address The Mayor. (Noted in November.)

Ga., Atlanta.—Council Finance Committee authorized various appropriations for street improvements during 1916; will pave W. Peachtree St. with bitulithic, with small granite blocks between car tracks, from south junction of Peachtree St. to North Ave., and with wood block from North Ave. to 6th St.; cost to be divided between city, property owners and street-car company; cost to city, \$10,000 for bitulithic and \$8718.52 for wood blocks; resurface Ivy St. from Edgewood Ave. to Peachtree St., Belgian blocks to be covered with asphalt; cost to city, \$3216.43; appropriated \$22,525.32 for various other street improvements, \$60,000 for ordinary street work to be divided among the different wards and \$35,000 street repair work.

Ga., Darien.—McIntosh County Comms., J. G. Legare, Clerk, will issue \$20,000 bonds for road construction.

Ky., Brooksville.—Bracken County Court plans to construct 2 mi. of road on 3 highways leading to county-seat from Augusta, from Germantown and from Milford; total 6 mi.; reported as considering vote on \$250,000 bond issue for road construction.

Ky., Georgetown.—Scott county voted \$100,000 bonds to improve roads. Address County Comms. (Noted in November.)

La., DeRidder.—Beauregard parish votes Jan. 22 on \$700,000 bonds to construct roads. Address Police Jury. (Lately reported contemplating bond election.)

La., Hammond.—City Com. appropriated \$30,000 to gravel 8 mi. of streets. T. R. Thames, Commr. of Finance.

Md., Hagerstown.—City will petition Legislature for authority to issue \$75,000 bonds to improve streets. Address The Mayor.

Miss., Canton.—Madison county, Dist. No. 2, has issued bonds to construct gravel roads costing \$100,000; engaged Xavier A. Kramer, Magnolia, Miss., as Engr.

Miss., Laurel.—City Comms. contemplate issuing \$25,000 bonds to pay city's share of additional street paving, extend sewers and erect 2-room school building in Wassau Addition.

Miss., Pass Christian.—City votes Jan. 31 on \$30,000 bonds to improve streets; Xavier A. Kramer, Engr., Magnolia, Miss. (Noted in Dec.)

Mo., Ozark.—Christian County Comms., Billings Eight-Mile Road Dist., will vote Jan. 19 on \$40,000 bonds for road construction; H. J. Neyer, Dist. Secy.

N. C., Mt. Olive.—City contemplates street improvements. Address The Mayor.

Okla., Cherokee.—Alfalfa County Comms. have plans for 5 mi. road work; cost \$9000; Wm. Haviland, Engr.

Okla., Durant.—Bryan county, Township No. 9, voted \$25,000 bonds to improve roads. Address County Comms.

Okla., Pawnee.—City will form improvement district for additional street paving; expected to engage Benham Engineering Co., Consult. Engr., Oklahoma City, to prepare plans, specifications, etc.

S. C., Florence.—City, J. Newton Johnston, Commr. of Streets, opened bids on construction of 12,000 sq. yds. reinforced concrete roadway and 10 mi. 5-ft. concrete sidewalks; E. R. Horton, Anderson, S. C., lowest bidder on roadway at \$1.26 per sq. yd.; J. R. Steele, Bennettsville, S. C., lowest bidder on sidewalks at 83 cents per sq. yd.; \$15,000 available for roadway; \$25,000 for sidewalks; C. H. Carlisle, City Engr. (Bids noted in Dec.)

Tenn., Ashland City.—Cheatham County Comms., S. L. Harper, Clerk, and D. W. Street, Chrmn., contemplate improvements to 110 mi. road. (Lately noted to vote Meh. 21 on \$150,000 bonds.)

Tenn., Centerville.—Hickman county votes Meh. 1 on \$200,000 bonds to construct roads. Address County Comms.

Tenn., Jonesboro.—Washington county votes Mich. 25 on tax to grade and macadamize roads. Address County Comms.

Tenn., Lonsdale.—City Council adopted plans to improve 11 streets, costing \$18,000; will vote again on \$30,000 bonds, previous election having been declared illegal; \$10,000 of bond issue for street improvements; balance to liquidate present indebtedness; H. E. Christenberry, Mayor. (Noted in November.)

Tenn., Tazewell.—Claiborne county will grade and macadamize 29 mi. roads; Road Comms., J. H. S. Morison, Chrmn., receive bids until Feb. 7. (See Machinery Wanted—Road Construction.)

Tex., Canton.—Van Zandt County Comms. contemplate expending \$145,000 for road construction.

Tex., Columbus.—Colorado County Comms. Court contemplates issuing \$200,000 warrants to construct gravel roads and cement concrete bridges; county plans to vote in Feb. on \$100,000 bonds to construct Houston-San Antonio highway.

Tex., Giddings.—Lee County Comms. let contract Smith Bros., Crockett, Tex., at \$30,000 to construct roads; E. F. Brown, Engr., will supervise construction.

Tex., Houston.—City will pave with 8 in. of gravel and vertical fiber brick Beauchamp St. from White Oak to Highland St. and Rusk Ave. approach to Capitol Ave. Bridge; bids until Jan. 22; Ben Campbell, Mayor. (See Machinery Wanted—Paving.)

Tex., Luling.—Caldwell county, Road Dist. No. 3, votes Jan. 22 on \$50,000 bonds for road construction.

Tex., Ozona.—Crockett County Court contemplates expending \$25,000 additional for road improvements.

Tex., Stiles.—Reagan County Comms. appropriated \$2000 to build road from Big Lake to Stiles.

Tex., Wichita Falls.—Wichita County Commissioners contemplate constructing concrete roadway at lake spillway; cost \$2100.

W. Va., Kingwood.—Preston county, Lyon Dist., contemplates voting on \$170,000 bonds to construct 24 mi. concrete and macadam road. Address County Comms.

W. Va., Parkersburg.—City contemplates paving sections of Covert, 17th, Latrobe, Swann, 16th and 14th Sts. with concrete, width 20 ft.; also to pave with brick sections of Ann and 3d Sts., Murdoch and Park Aves.; total estimated cost \$40,554.80. T. L. Higgs, Acting City Engr.

W. Va., Philippi.—City let contract G. W. Dildier of Philippi to pave 8 blocks with brick; require 300,000 brick, for which contract has been let.

SEWER CONSTRUCTION

Ark., Little Rock.—Comms. Sewer Dist. No. 81 (T. Guy Bragg and others) let contract Nick Peay Construction Co. of Little Rock at \$9685 to construct sewers.

Fla., Dunedin.—Town will construct 2800 ft. 6 to 12-in. sanitary sewers, Imhoff sedimentation tank and 1400 ft. 15-in. storm drains; Jos. N. Drew, Engr.; W. Y. Douglass, Town Clerk. (See Machinery Wanted—Sewer Construction.)

Ga., Atlanta.—Council Finance Committee authorized appropriation \$37,881 for sewer construction during 1916.

Ga., Milledgeville.—T. P. Stanley, State Supvr. of Roads, making surveys for sewerage system to be constructed for State Farm, State Sanitarium for Insane and State Reformatory.

Md., Rockville.—Montgomery county, Bethesda Dist., will expend \$75,000 to \$90,000 to construct sewer system; 8 to 24-in. pipe sewers; disposal plant with daily capacity 500,000 gals.; open construction bids in spring; Greiner & Whitman, Engrs., 1319 Fidelity Bldg., Baltimore. (Noted in December.)

Miss., Laurel.—City Comms. contemplate issuing \$25,000 bonds to extend sewers, etc. (See Road and Street Work.)

Mo., Bowling Green.—City will soon vote on bond issue for sewer improvements and water-works; Black & Veatch, Engrs., 501 Interstate Bldg., Kansas City, Mo.

N. C., Mt. Olive.—City let contract J. B. McCrary Co., Atlanta, Ga., at \$19,000 to construct sewer system. (Lately noted.)

N. C., Mt. Olive.—City will expend \$19,000 to construct about 5 mi. sewers; Engr. and Contr., J. B. McCrary Co., Atlanta, Ga.

N. C., Nashville.—City votes Feb. 15 on \$20,000 bonds to construct sewer system; M. W. Lincke, Mayor.

Tex., Magnolia Park, P. O., at Houston.—City accepted plans and specifications by M. Griffin O'Neill & Sons, Engrs., Praetorian Bldg., Dallas, for complete system sanitary sewers; engineers advise Manufacturers Record as follows: 2 Imhoff tanks; 2 sprinkling filters; screen chamber; sludge bed; 3 sewage-ejector stations, each having duplicate electric and gas-driven ejectors; complete chlorine plant; 35 mi. vitrified sewer tile; total cost \$165,000.

Tex., Venus.—City voted \$10,000 bonds to construct sewer system. Address The Mayor. (Lately noted.)

Va., Narrows.—City votes Jan. 20 on \$18,000 bonds to construct sewer system and water-works. Address The Mayor.

Va., Norfolk.—Board of Control recommended to City Council appropriation of \$2510 to construct sewers on 41st St.

Va., Richmond.—City let contract A. W. Maynard at \$1,347.07 to construct sewer in Orleans St. from Gilliam to Union.

TELEPHONE SYSTEMS

Ky., Louisville.—Louisville Home Telephone Co., P. S. Pogue, Gen. Mgr., has let contract for branch office; 45x60 ft.; brick and concrete fireproof construction; Gray & Wischmeyer, Archts., Louisville. (Lately noted.)

Mo., Caruthersville.—S. D. Bray of Holand, Mo., will probably secure franchise for telephone system.

N. C., Concord.—Concord Telephone Co. will build exchange; 2 stories; install switchboard with automatic connections.

S. C., Pauline.—Pauline Farmers' Telephone Co. (S. T. D. Lancaster and others) will construct 4 mi. main-line telephone system; 30 drop-switch exchange; now opening bids for machinery and supplies; lately noted inceptd. (See Machinery Wanted—Telephone Equipment.)

Tenn., Cleveland.—Cumberland Telephone & Telegraph Co. (main office, Louisville, Ky.) is reported to expend \$50,000 for improvements to telephone system; secured franchise providing for new common battery system; invites bids on erection of exchange. (Noted in Oct.)

Tex., Seadrift.—W. N. Cowards will erect building for telephone exchange, etc. (See Buildings Proposed—Stores.)

TEXTILE MILLS

Ala., Piedmont—Cotton Yarn.—Coosa Mfg. Co. increased capital from \$175,000 to \$25,000; this additional investment provides for new machinery, etc., during 1915; installations included 10,000 spindles previously announced.

Ga., Cedartown—Cotton Yarn.—Cedartown Cotton & Export Co., S. S. Evans, Gen. Mgr., writes to Manufacturers Record: "Dimensions of additions are 75x256 and 66x100 ft.; regular mill construction; cost about \$25,000; no architect; contractors, J. H. Duke & Son, Anniston, Ala.; 3640 spindles in addition with accompanying machinery for double carding; machinery cost about \$100,000; furnished by Howard & Bullough, American Machine Co., Pawtucket, R. I.; Georgia Railway & Power Co., Atlanta, will bring transmission lines into town and entire mill will be equipped with electric drive." (Lately noted to build addition, install spindles, etc.; Chas. Adamson, 119 S. 4th St., Philadelphia, is Prest.)

Ga., Columbus—Cotton Cloth.—Muscogee Mfg. Co. will build additions and equip them with new machinery; invest about \$400,000; construct 200x105-ft. 5-story mill, 160x45 ft.; 2-story addition and 76x45 ft. 5-story addition; standard brick and wood slow-burning construction with steel beams; probably award contracts before Feb. 1; C. L. Makepeace & Co., Archts.-Engrs., Providence, R. I.; install 22,000 spindles, 300 looms, accompanying machinery, etc., all of which has been purchased; departments will include spinning room, weaving shed, machine shop, bleachery and dyehouse. (Reported in December as to build additions.)

Ga., Macon—Cotton Bagging.—W. Hopson Goodloe, Consult. Engr., American National Bank Bldg., is interested (for client) in proposed small plant to manufacture cotton bagging from waste material. (See Machinery Wanted—Cotton-bagging Machinery.)

N. C., Charlotte—Cotton Products.—Highland Park Mfg. Co., Atlanta, Ga., at \$19,000 to construct sewer system. (Lately noted.)

N. C., Charlotte—Cotton Products.—Highland Park Mfg. Co., Atlanta, Ga., at \$19,000 to construct sewer system. (Lately noted.)

N. C., C. C. Crouse—Cotton Yarn.—M. L. Jackson, Salisbury, N. C., purchased Stirault Yarn Mill; has 1800 spindles, etc.; will probably renew spinning equipment.

N. C., Landis—Cotton Yarn.—Linn Mills Co. will enlarge mill; install 4000 spindles, etc.

N. C., Long Island—Cotton Goods.—Long Island Cotton Mill Co. may build another mill; Geo. H. Brown, Prest., Statesville, N. C.

N. C., Mt. Holly—Cotton Yarn.—C. E. Hutchinson and associates are reported to build cotton-yarn mill.

N. C., Shelby—Hosiery.—Shelby Hosiery Mills Co. (L. M. Hull and others) will establish hosiery mill; remodeled 2-story building; install 78 machines—ribbers, knitters and loopers; electric power; ordered equipment; later plans to install bleacher and possibly dye plant. (Lately noted inceptd. with \$25,000 capital.)

S. C., Clover—Cotton Yarn.—Hawthorn Spinning Mills, capitalization \$500,000, incorporated by M. L. Smith, J. M. Smith and W. P. Smith of Clover, John R. Hart of York, S. C., and H. F. Richardson of New Bedford, Mass.; plans to build cotton-yarn mill. (M. L. Smith, Secy.-Treas. Clover Cotton Mfg. Co., lately noted to organize another mill company.)

S. C., Fort Mill—Cotton Cloth.—Fort Mill Mfg. Co. will build addition to No. 2 mill; will add 600 new looms, spindles, cards, etc.; has ordered this equipment.

Tex., Post—Cotton Sheeting.—Postex Cotton Mill will build an additional structure for increasing bleaching facilities; 100x40 ft.; 1 story; brick construction; steel sash and wire glass; cost \$5000; R. E. Gilmore, Archt.; Double U. Co., Contr.; both of Post.

Va., Mouth of Wilson—Cotton Goods.—Fields Mfg. Co. succeeds Fields-Hash Mfg. Co.; has 576 spindles, 10 broad looms, belt drive, etc.; lately noted inceptd. (See Machinery Wanted—Textile Mill Machinery.)

Va., Williamsburg—Knit Goods.—Williamsburg Knitting Mill Co., authorized capital \$30,000, inceptd.; W. A. Bozarth, Prest.; Geo. P. Coleman, V.-P.; C. M. Hall, Secy.-Treas.; T. S. Griffin, Mgr.-Supt.; purchased existing plant and will increase output.

WATER-WORKS

Ala., Fairhope.—City voted \$8000 bonds to construct water-works; Xavier A. Kramer, Engr., Magnolia, Miss.; A. O. Beiglin, Mayor. (Lately noted.)

Ala., Hurtshboro.—City votes Feb. 8 on issuing \$9000 bonds for water and light plant extensions; Wheeler Williams, Mayor.

Ala., Moulton.—Moulton Water-Works, H. C. Dunn, Gen. Mgr., will construct branch water main; 70 lbs. pressure; 1500 ft. 2½ or 3-in. cast-iron pipe; also consider wood pipe or 2½-in. wrought-iron pipe; lately noted. (See Machinery Wanted—Piping.)

Ark., Hartford.—City has formed water-works and electric-lighting improvement district; engaged Benham Engineering Co., Consult. Engr., Oklahoma City, to make investigation and estimates, prepare plans and specifications, etc.; city plans bond issue. (Noted in Dec. as contemplating to construct water-works and electric-light plant.)

Fla., Dunedin.—Town will construct 10,600 ft. 4 to 8 in. water mains; bids until Feb. 4; Jos. N. Drew, Engr.; W. Y. Douglass, Town Clerk. (See Machinery Wanted—Water-works.)

Fla., Key West.—City Council passed ordinance granting franchise for water-works to J. J. Quinn Co. of Miami, Fla. (Company lately noted to have applied for franchise.)

Ga., Atlanta.—Council Finance Committee appropriated \$125 for new equipment for Water-works Dept.

Ga., Pearson.—Pearson Mfg. Co. has municipal franchise for water-works and electric-light plant.

Ga., Juliette.—Juliette Milling Co. may extend water system for general public service; is now constructing large concrete reservoir.

Ga., Summerville.—City contemplates constructing water-works; appointed committee, John S. Cleghorn, Chmn., to engage engineer to make surveys and estimates of cost.

Ga., Wadley.—City will build water-works; to include 25,000 or 50,000-gal. tank and 80-ft. tower; S. W. Overstreet, Mayor; noted in Sept. as to construct water-works. (See Machinery Wanted—Water-works.)

Ga., Weston.—Town will construct water-works to cost \$3500; capacity 50 gals. per min.; erect sheet-iron building, about 20x30 ft.; install gas engine, pumps, etc., costing \$350; 10,000-gal. cypress tank on 60-ft. tower, costing \$600; has let contracts for building and machinery; A. B. Lambert, Macon, Ga., Engr. and Contr.; G. G. Lumsford, official in charge. (Lately noted voted \$3500 bonds.)

La., Covington.—City will vote on issuing bonds for water-works to cost \$60,000 Xavier A. Kramer, Engr., Magnolia, Miss. (This supersedes recent item.)

La., Lake Charles.—City is reported as contemplating construction of water-works. Address The Mayor.

Miss., Pass Christian.—City votes Jan. 31 on \$45,000 bonds to construct water and fire-protection system; Xavier A. Kramer, Engr., Magnolia, Miss. (Noted in Dec.)

Miss., Pontotoc.—Pontotoc Water-works Co., A. W. Kearley, Mgr., will install complete water system with overhead tank of 100,000 gals. capacity, mains, pumps, fire equipment, etc., for 2000 population. (Lately noted to build water-works.)

Mo., Bowling Green.—City will soon vote on bond issue for water-works and sewer improvements; Black & Veatch, Engrs., 507 Interstate Bldg., Kansas City, Mo.

N. C., Hendersonville.—City Comms. contemplate expending \$150,000 for new water supply and system; Gilbert C. White, Engr., Charlotte, N. C., submitted preliminary report.

N. C., Nashville.—City votes Feb. 15 on \$50,000 bonds to construct water-works; M. W. Lincke, Mayor.

N. C., Robersonville.—City, J. C. Smith, Mayor, does not contemplate water-works construction for near future. (Lately reported.)

Okl., Dewar.—City will vote on \$40,000 bonds for water-works. Address The Mayor.

Okl., McAlester.—City Comms. plan to construct 45-ft. dam across Wild Horse Creek; also to lay 24-in. pipe line connecting reservoir with Lake Talawanda; probably employ convict labor.

Tex., Fort Worth.—City votes Jan. 21 on \$50,000 bonds to complete Lake Worth conduit. (Bonds defeated at election as lately noted.)

Tex., Houston.—City let contract to J. G. Brown Co., 708 Stewart Bldg., Houston, to construct auxiliary water-works; 3 deep artesian wells, 3 brick pumphouses, 3 deep-well pumps and 3 electric motors.

Tex., Magnolia Park, P. O. at Houston.—City is not having plans prepared for water system, recent statement being incorrect; has accepted \$85,000 system completed; M. Griffin O'Neill & Sons, Engrs., Dallas, Tex., designed the plant.

Tex., Temple.—City will install 2 multi-state type centrifugal pumping units, direct connected to suitable 2200-volt 60-cycle 3-phase induction motors; bids until Jan. 31; J. T. Martin, City Secy. (See Machinery Wanted—Pumping Plant.)

Va., Narrows.—City votes Jan. 20 on \$15,000 bonds to construct water-works and sewer system. (Address The Mayor.)

WOODWORKING PLANTS

Ark., Jacksonville.—Ax Handles, etc.—J. D. Thompson and W. G. Graham will erect building and install machinery to manufacture ax handles, wagon and buggy spokes.

Ark., Rison—Staves.—Wheeler Stave Co., Benton, Ark., purchased R. M. Fletcher Stave & Lumber Co.'s plant at Rison. (See Ark., Pine Bluff.)

Ark., Pine Bluff—Staves, etc.—Wheeler Stave Co., Benton, Ark., purchased R. M. Fletcher Stave & Lumber Co.'s Pine Bluff plant, mill at Rison, Ark., and standing oak

timber; propose to double size of local plant and make it finishing mill.

Fla., Tampa—Cigar Boxes.—Victor E. Castro, Manrique 58, Havana, Cuba, is reported as contemplating establishment of plant to manufacture cigar boxes from growth on outer portion of royal palm tree.

Ky., Pikeville—Flooring.—Pikeville Planing Mill & Supply Co. will install plant to manufacture flooring; also plans to increase capacity of power plant.

N. C., Asheville—Wood Products.—Carolina Wood Products Co., authorized capital \$500,000, Incptd.; Frank Buell, Pres.; Geo. E. Stevenson, Treas.; company wires Manufacturers Record: "Furniture plant now operating, 200x60 ft., with warehouse 175x64 ft., 3 floors; building being constructed 385x94 ft., 3 floors, and storing sheds 200x64 ft.; power plant and 6 drykilns; buildings to cost \$100,000, machinery \$150,000; daily capacity 100,000 ft. lumber; to manufacture ready-cut houses, furniture, house trim, flooring and general planing-mill line."

N. C., Maysville—Cooperage.—Maysville Cooperage Co., capital \$25,000, Incptd. by R. L. McLead of Maxton, John F. McNair of Laurinburg, N. C., and M. C. McIver of Maysville. (Lately noted voted \$3500 bonds.)

N. C., Newbern—Cooperage.—S. H. Adams Cooperage Co., capital \$100,000, Incptd. by East Carolina Lumber Co. of Newbern, S. H. Adams and Lee H. Reid of Portland, Ind.

Tex., Texas City—Handles.—Texas City Handle Co., capital \$30,000, organized by Hugh B. Moore and others; to manufacture handles.

Va., Newport News—Boxes, etc.—W. A. Bartz, Williamsburg, Va., is negotiating for lease of site at municipal wharf on which to build plant to manufacture boxes, barrels and crates; site is 250x300 ft.

Va., West Point—Veneer Panels, etc.—York Mfg. Co., capital \$50,000, Incptd. to manufacture veneer panels, chair bottoms, etc.; acquired old West Point Panel Works; will repair present machinery and install additional equipment; W. C. Davis, Pres.; Nathan N. Hess, V. P.; Chas. B. Stark, Secy.-Treas.

W. Va., Huntington—Furniture.—Office Equipment Co., capital \$25,000, Incptd. by F. L. Whittaker, Dennis McNeil, Homer Klem and others.

W. Va., Princeton—Furniture.—Baylor-McNutt Furniture Co., capital \$25,000, Incptd. by J. W. McNutt, C. T. Snidow, C. R. McNutt and others.

FIRE DAMAGE

Ala., Florence.—Mrs. H. H. Thoel's residence on Tennessee St.; loss \$5000.

Ark., Bentonville.—Ray E. Keith Grocery Co.'s store; W. M. Fishback's office; loss \$5000.

Ala., Florence.—Dick Bailey's residence on Cherry St.

Ark., Hot Springs.—T. M. Dodson's residence on old Wire Rd.

Ark., Lono.—Petross & Elliott's cotton gin and mill; loss \$5500.

D. C., Washington.—Rosslyn Supply Co.'s store at 27th and I Sts. N. W.; building owned by Knott & Moler, 927 28th St. N. W.; loss \$35,000.

Fla., Brooksville.—Buildings of H. D. Evans, L. D. Hathaway, Mrs. T. Cappleman, A. G. Friday, L. Pindar, E. Hope, E. E. Barnett and G. V. Ramsey; total loss, \$40,000.

Fla., Avon Park.—N. G. Langford's store; loss \$5000.

Fla., Palmetto.—Seaboard Air Line Ry.'s freight depot; W. D. Fauchette, Ch. Engr., Norfolk, Va.

Ga., Atlanta.—Vittur Livery & Sales Co.'s stable; loss \$60,000.

Ga., Buckhead.—J. H. Rary's building; Miss Lettie Anderson's store, owned by Jack Smith; J. P. Nash's store, owned by Peachtree Park Grocery Co.; total loss, \$20,000.

Ga., La Grange.—H. M. McCoy's residence on Broom St., owned by H. C. Butler.

Ga., Odum.—L. E. Quinn's residence.

Ga., Rome.—McGhee Cotton Co.'s warehouse; loss \$12,000 to \$15,000.

Ky., Cave City.—Duke Farris & Co.'s store, loss \$10,000; Spencer Bros.' building, loss \$8000; Reynolds Bros.' store, loss \$8000.

Ky., Corbin.—West Side city school; loss \$4000. Address Board of Education.

Ky., Oneida.—Boys' dormitory at Oneida Institute, J. A. Burns, Pres.; loss \$3000.

Ky., Lexington.—Ben Ali Theater, owned by Haggard estate, Chas. H. Berryman, Mgr., loss \$80,000; Lexington Laundry, loss \$5000.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Ky., Lexington.—Graham Lumber & Mfg. Co.'s plant; loss \$10,000.

Ky., Prestonsburg.—Mrs. Maggie Cline's residence, loss \$3500; A. E. Archer's residence.

La., Arcadia.—J. T. Barrette's residence.

La., Monroe.—R. P. Webb's residence on Washington St.; loss \$10,000.

La., Monroe.—West Monroe Mfg. Co.'s woodworking plant; loss \$50,000.

Md., Baltimore.—Thos. Bros. & Klein's charcoal and chicken-feed plant; loss exceeding \$15,000; offices at 1st Ave. and 2d St. E.

Md., Chestertown.—William Smith Hall administration building at Washington College; loss \$71,000; James W. Cain, Pres.

Md., Havre de Grace.—Dwelling on Old Bay Farm, owned by Harry B. Wolf, 204 Courtland St., Baltimore.

Miss., Holly Springs.—Grenada Cotton Compress Co.'s plant, 5000 bales of cotton and 15 loaded freight cars; total estimated loss \$350,000.

Miss., West Point.—J. E. Cunningham's residence; loss \$20,000.

Mo., Independence.—Lefts Theater; loss \$50,000.

Mo., Kansas City.—A. W. Bear Commission Co.'s produce house; Aaron Poultry & Produce Co.'s building; loss \$30,000.

Mo., Morely.—Old Public School. Address School Trustees.

Mo., Wittenberg.—Miesner Lumber & Mfg. Co.'s swing factory; loss \$15,000 to \$20,000.

N. C., Burgaw.—A. E. Burton's residence.

N. C., Hickory.—Abernathy Tanning Co.'s plant; loss \$10,000.

N. C., Laurinburg.—D. W. L. Smith's residence.

Okl., Wirt.—Hall Furniture Co.'s store; Gumption's Garage; Webb's Hotel and several other buildings; loss \$25,000.

S. C., Iva.—R. S. Yeargin's building.

Tenn., Nashville.—Fish Bros. store at 404 Union St.; loss \$5000.

Tex., Amarillo.—J. E. Bryant Co.'s produce house and candy factory, loss \$65,000; building

ing owned by C. J. Chanslor, estimated loss \$20,000.

Tex., Dallas.—National Vinegar & Cider Co.'s plant; loss on building \$2500, and on machinery \$2000.

Tex., Dallas.—E. B. Chenoweth Grain Co.; loss on building, owned by Y. W. Young estate, \$3000.

Tex., Ennis.—J. M. Cherry's residence; loss \$6000.

Tex., Ennis.—John Clark's residence, owned by Dr. C. P. Cook; loss \$3000.

Tex., Port Arthur.—Buildings owned by S. E. Newton, W. E. Hall and others and occupied by Geo. C. Shipper, John Haney, K. E. Bell, Ray Canfield and City Barber Shop; total loss \$40,000.

Tex., Houston.—R. M. Warren's residence at Ave. C and Wayside Drive; loss \$3500.

Tex., Kurten.—Dr. W. F. Odom's residence; loss \$5000.

Tex., Mexia.—W. O. Miller's residence.

Tex., Midlothian.—Cottonseed warehouse of Midlothian Oil & Gin Co.; loss on building \$15,000.

Tex., Omaha.—G. M. Chaddicks' residence.

Tex., San Marcos.—Alec Glasscock's residence; loss \$5000.

Tex., Sherman.—Colonial Hall at Kiddie Key College for Girls.

Tex., Voth.—Fletcher Rose's residence; postoffice, L. B. Fulgham, postmaster.

Tex., Waco.—C. H. Higginson's building; loss \$15,000.

Va., East Radford.—Radford Bakery; building was owned by T. J. Northcross; J. M. Kirby's tin shop; total loss, \$4500.

Va., Fredericksburg.—Mrs. Edna F. Coleman's residence on Fauquier St.; loss \$3000.

Va., Greenville.—"Greenville," residence of Erwin McMichael in Prince George county.

Va., Richmond.—Whittet & Shepperson's printing plant at 11 N. H St.; loss \$3000.

Va., Suffolk.—Lummis & Co.'s peanut factory; loss \$75,000 to \$100,000.

W. Va., Quinnimont.—Quinnimont Hotel, owned by Quinnimont Hotel Co.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ala., Birmingham.—W. F. Buffington will erect apartment-house; 2 stories; brick veneer; slate roof; steam heat; tiled porches and bathrooms; hardwood floors; 4 five-room suites; cost \$9000; H. D. Breeding, 15 Watts Bldg., Archt., Birmingham.

Md., Baltimore.—Suburban Apartment Co. is having plans prepared by Geo. B. Morris, Gunther Bldg., Baltimore, for apartment building at Garrison and Piedmont Aves.; 3 stories; 63x90 ft.

Md., Frederick.—Geo. L. Kaufman will convert building into store and apartments. (See Stores.)

Mo., Joplin.—Riley F. Robertson, P. O. Box 412, will erect apartment-house at 410 Wall St.; 80x120 ft.; fireproof; steam heat; cost about \$30,000; construction by owner. (Lately noted.)

Mo., St. Louis.—R. Mederacke will erect 2-story tenement-house at 3196-98 Portis St.; cost \$5000; construction by owner.

Mo., St. Louis.—M. L. Kenney will erect 6 double flats at Marcus Ave. and Leduc St.; 4 suites, each of 3 rooms and kitchenette; site 173x198 ft.; investment \$65,000.

Mo., St. Louis.—Geo. W. Weaver will erect flat on Louisiana Ave.

Mo., St. Louis.—Frank Rennholz will erect 4 and 5-room flat on Louisiana Ave.

Mo., St. Louis.—Miss Esther Beeler will erect apartment-house on Sheridan Ave. near Glasgow Ave.

S. C., Anderson.—A. P. Gates and E. E. Elmore will erect apartment-house or 4 cottages. (See Stores.)

Va., Norfolk.—E. B. Barclay will erect 2 apartment-houses; 3 stories; 6 suites; one 43x70 ft., cost \$12,000; the other cost \$13,500; construction by owner.

Va., Petersburg.—S. Daly Craig is preparing plans for 2-flat building on Berkely Ave.

Va., Richmond.—Davis & Archer will erect tenement-house on Chaffin St.; 2 stories; brick; cost \$8700.

Va., Richmond.—Oscar Hooker will erect apartment-house on 1st Ave.; 2 stories; brick; cost \$10,000.

BANK AND OFFICE

Ala., Attala.—Farmers' Bank of Attala, Lamar Smith, Pres., will erect building.

Ala., Huntsville.—W. T. Hutchens, 314 Mill St., will erect office, warehouse and theater building. (See Theaters.)

Ala., New Decatur.—Central National Bank will remodel building.

Ark., Hope.—Hope National Bank will erect building; 3 stories; electric elevators.

Fia., Dade City.—Bank of Pasco County will erect building; marble front.

Fia., St. Petersburg.—Home Security Co. is reported to erect four additional stores to building for bank and hotel.

Ga., Cordele.—Cordele Exchange Bank will erect building; 5 stories.

Ga., Griffin.—Thos. J. Brooks will remodel building for store and offices. (See Stores.)

Ga., Tifton.—Bank of Tifton. H. H. Tift, Prest., will erect building; 1½ stories; cost \$30,000.

Ky., Hazard.—Barney Baker will not erect building. (Lately noted to erect bank and office building.)

Md., Baltimore.—Public Service Bldg. Co. receives bids until Jan. 28, through Parker, Thomas & Rice, Archts., Union Trust Bldg., Baltimore, to erect building at Lexington and Liberty Sts.; 20 stories; 120x84 ft.; fireproof; exterior granite and terra-cotta; metal window frames, doors and windows; 9 high-speed elevators; forced-feed ventilating and steam heating; vacuum cleaning system; fire pumps; refrigerating plant to furnish feed water throughout building; estimated cost \$1,000,000; contractors estimating are J. Henry Miller & Co., Eutaw and Franklin Sts.; Morrow Bros., Fidelity Bldg.; Irwin & Leighton, Keyser Bldg.; all of Baltimore; Chas. McCaul Co., 1715 Sansom St.; Cramp & Co., Denckla Bldg.; both of Philadelphia; Whitney Co., 1 Liberty St.; James Stewart & Co., 39 Church St.; Geo. A. Fuller Co., 111 Broadway; Thompson-Starrett Co., 49 Wall St.; all of New York. (Contract for steel frame lately noted let to Geo. A. Fuller Co., and for fabricated steel to American Bridge Co., both of New York.)

Tex., Rockdale.—T. M. Williams will erect store and office building. (See Stores.)

Va., Hopewell.—Hopewell Bank & Trust Co., Virginia Finance Corp., fiscal agent, will erect brick bank building.

Va., Suffolk.—National Bank of Suffolk is reported to erect 5-story bank and office building.

CHURCHES

Ala., Clanton.—Baptist Church, Rev. H. T. Crampton, pastor, plans to erect building; fireproof; probably asbestos roof; steam or hot air heat; electric lights; cost \$12,000 to \$16,000; opens bids in summer. Address Guy Higgins, Clanton.

Ala., Hartselle.—First Church of Christ will erect building; stone; tile roof; furnace heat; Sunday-school auditorium to seat 425; cost \$18,000; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham; bids received about March 1.

Ala., Moulton.—Methodist Church, Rev. Mr. Donovan, pastor, will erect building; frame; furnace heat; pastor and building committee are now taking bids; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ark., Cabot.—Baptist Church will erect building. Address The Pastor.

Ga., Cochran.—Methodist Church will erect building; cost \$10,000 to \$12,000; Rev. Chas. W. Curry, pastor.

Ga., Savannah.—Lutheran Church of the Ascension, Rev. Wm. Hoppe, pastor, will erect chapel.

La., New Orleans.—Canal Street Presbyterian Church, Rev. C. S. Sholl, pastor, will expend \$6000 for improvements; will remodel and relight auditorium, install new heating apparatus, raise, enlarge and provide 6 or 8 classrooms in Sunday-school, etc.

Mo., Independence.—Reorganized Church of Jesus Christ of Latter Day Saints will erect social center; cost \$20,000; will contain swimming pool, hall, etc. Address The Pastor.

N. C., Durham.—Carr Methodist Church will erect building; plans in progress; cost \$20,000. Address The Pastor.

N. C., Henrietta.—Methodist Church plans to enlarge building, remodel auditorium, provide Sunday-school rooms, etc. Address The Pastor.

N. C., Wagram.—Baptist congregation of Spring Hill, N. C., will erect \$10,000 building in Wagram. Address The Pastor.

Tenn., Cleveland.—First Baptist Church will erect building at Church and Centenary Sts. Address The Pastor.

Tenn., Sparta.—First Baptist Church will erect brick building. Address The Pastor.

Tex., Palestine.—Grace Methodist Church will erect \$10,000 building. Address The Pastor.

Va., Hopewell.—Christian church, Rev. T. H. Warner, pastor, plans to erect building.

W. Va., Huntington.—Trinity Episcopal Church approved plans by E. L. Alger for church and parish-house at 5th and 11th Sts.; cost \$65,000 and \$35,000, respectively.

W. Va., Warwood.—Catholic church will erect building at 15th and Warwood Ave. Address The Pastor.

CITY AND COUNTY

Ga., Rome.—Auditorium and City Hall.—City will probably vote in Feb. on \$40,000 bonds to complete city hall and auditorium.

Ga., Macon.—Natatorium.—City has plans by Nisbet & Brown, Macon, for natatorium city park; 50x150 ft.; the floors and sides; contain dance hall, convention hall, etc.

Miss., Clarksdale.—City Hall.—City will erect city hall; W. D. Cutrer, Mayor.

Miss., Pass Christian.—City Hall and Jail. City votes Jan. 31 on \$14,000 bonds to erect and furnish city hall and jail. Address The Mayor. (Noted in December.)

S. C., Greenville.—City Hall.—City Council rescinded action authorizing erection of city hall. (Lately noted.)

Tex., Houston.—Home.—City will expend \$3500 to repair Newsboys' Home on Washington St. Address The Mayor.

Tex., Houston.—Sheels.—James Stewart & Co., Inc., New York, writes Manufacturers Record that they are not doing any work at present at Houston. (Lately noted to have contract to erect sheds, etc., at Municipal Wharf No. 1.)

Va., Holland.—Jail.—B. W. Councill, Town Recorder, receives bids until Feb. 7 to erect jail; plans and specifications on application.

DWELLINGS

Ala., Birmingham.—H. Grady Webb will erect \$4000 residence; brick veneer.

Ala., Birmingham.—H. K. Miller will erect dwelling at Milner Heights; reinforced concrete and hollow tile; tile roof; cost about \$30,000. (Lately noted.)

Ala., Birmingham.—W. M. Seoville of Indiana will erect 24 dwellings at Highland Ave. and 30th St.; 2 stories; hollow tile; tile roofs; steam heat; tiled bathrooms and porches; hardwood floors; cost \$35,000; contract let about Feb. 1; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ala., Birmingham.—Mrs. Wm. F. Chambers will erect residence; stone; 1½ stories; 9 rooms; tile roof; steam heat; hardwood floors; tiled bathrooms; cost \$9000; bids received about Feb. 1; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ala., Birmingham.—Robt. Stephens will erect residence; bungalow type; 7 rooms; tile roof; steam heat; tiled bathrooms; hardwood floors; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ala., Birmingham.—W. W. Drigger will erect bungalow; frame; 8 rooms; composition shingle roof; steam heat; hardwood floors; cost \$3500; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ala., Birmingham.—W. C. Bonham will erect residence brick veneer; composition shingle roof; furnace heat; hardwood floors throughout; tiled porches and bathrooms; cost \$5000; Leslie Welton, Archt., American Trust Bldg., Birmingham.

Ala., Birmingham.—Guy McKinley will erect residence at East Lake; ordinary construction; frame; bungalow type; 8 rooms; composition roof; furnace heat; hardwood floors throughout; tiled porches and bathrooms; 36x79 ft.; cement sidewalks; cost \$3000; J. G. Ringer, Archt., Steiner Bldg., Birmingham; day labor.

Ark., Fort Smith.—H. P. Wilson will erect \$1000 residence; A. C. Chisholm, Fort Smith.

Ark., Little Rock.—W. P. Forbes, Harkett, Ark., will erect residence; 7 rooms; frame; gas and electric lights; cost \$3500; A. C. Chisholm, Archt., Fort Smith, Ark.

D. C., Washington.—H. A. Kite has plans by Geo. T. Santmyers, 216 Kenois Bldg., Washington, for 5 two-story brick dwellings at 110 14th St. S. E.; cost \$15,000; construction by owner.

D. C., Washington.—C. H. Galliher has plans by W. R. Talbott, 1314 F St. N. W., Washington, for 7 two-story brick dwellings at 105 Upton St. and 121-29 Rock Creek Church Rd.; cost \$16,500; construction by owner.

Fla., Jacksonville.—Wm. Meier will erect 2-story frame residence on Herschell St.; cost \$4000.

Fla., Orlando.—Norris N. Griffin will erect residence.

Fla., Orlando.—A. B. Meade, Brooklyn, N. Y., will erect residence.

Fla., Orlando.—Mrs. Lula B. Wynne is having plans prepared by Murray S. Wynne, Orlando, for dwelling on Orange Ave.; 9 rooms; construction about April. (Lately noted under W. S. Wynne.)

Fla., Tarpon Springs.—D. A. Alissandratos and Geo. N. Cretkos will let joint contract to erect 2 residences; brick and tile; cost \$5000 each.

Ga., Atlanta.—Geo. A. Clayton, 507 Gould Bldg., will not erect dwellings this year as lately reported.

Ga., Atlanta.—K. N. Trowbridge will erect 5 dwellings on Patterson St.; cost \$6250.

Ga., Griffin.—John B. Mills will erect residence.

Ga., Macon.—Milton Heard will erect brick residence; cost \$4500.

Ga., Newnan.—T. C. Farmer will erect residence; frame, brick, stone and concrete; cedar shingle roof; patent hard plaster; hardwood floors; wood cornice; gas and electric fixtures; Horace B. Hammond, Archt., Atlanta.

Md., Baltimore.—Chas. H. Shultz, 910 N. Carrollton Ave., will erect cottage at 3431 Carrollton Ave.; 2½ stories; frame; 28x32 ft.; cost \$500; John Freund, Archt., 11 E. Lexington St., Baltimore.

Md., Baltimore.—George Haberset, 427-28 S. Broadway, has plans by A. Lowther Forster, Law Bldg., Baltimore, for residence; 2½ stories; frame; 30x50 ft.; cost about \$7000. (Lately noted.)

Md., Baltimore.—J. Charles Kemper, Plumlee Rd. near Ridgely Ave., will erect 10 dwellings on Kate Ave. between Park Heights Ave. and Plumlee Rd.; 2 stories; 14x44 ft.; iron-spot brick; cost \$12,000 to \$14,000; H. K. Smart, Archt., Berkley Ave. near Ridgely Ave., Baltimore.

Md., Baltimore.—George Schluderberg has plans by Chas. M. Anderson, 324 N. Charles St., Baltimore, for residence on Park Heights Ave., near Clark's lane; contractors estimating are G. Walter Tovell, Eutaw and McCullough Sts.; John Hiltz & Son, 3 Clay St.; Consolidated Engineering Co., Calvert Bldg.; Chas. L. Stockhausen Co., Inc., National Marine Bank Bldg.; J. J. Walsh & Son, 1533 Maryland Ave.; A. F. West, 15 E. Fayette St.; all of Baltimore; 3 stories; brick, stucco and Spanish tile. (Lately noted.)

Md., Baltimore.—Jos. L. White Realty Co., Monument and Potomac Sts., will erect 19 2-story brick dwellings in 3100 block McElroy St.; cost \$13,000; Chas. Broring, Archt., 9 N. Potomac St., Baltimore.

Md., Salisbury.—Wm. P. Jackson is having plans prepared by Owens & Sisco, Continental Bldg., Baltimore, for residence; 2½ stories; brick and frame.

Mo., Kansas City.—B. C. Sharp will erect residence on College Ave.

Mo., Kansas City.—Ralph Adams will erect 2-story stucco veneer dwelling at 1406 W. 50th St.; cost \$4000.

Mo., Kansas City.—William Jewell, Jr., will erect residence; 1 story; stucco veneer; cost \$4000.

Mo., St. Louis.—Robt. Nerlich will erect 5-room bungalow on Virginia Ave.

N. C., Asheville.—Gov. Locke Craig, Raleigh, N. C., purchased site in Grove Park and will erect residence; 2 stories; 9 rooms; wood construction; shingle roof; cost \$8000; heating plant \$1000; R. S. Smith, Archt., Asheville.

N. C., Asheville.—C. C. Paul will erect residence at Lexington Ave. and Broadway; cost \$5000; 7 rooms.

N. C., Laurinburg.—D. W. L. Smith will rebuild residence noted damaged by fire.

N. C., Wagram.—McNatt Conoley will erect residence.

N. C., Winston-Salem.—Harry Taylor will erect residence; English style; stucco exterior; 7 rooms; hot-water heat; cost \$4000; Northup & O'Brien, Archts., Winston-Salem.

N. C., Winston-Salem.—Barrett Taylor will erect residence; English style; stucco exterior; 6 rooms; hot-water heat; cost \$3500; Northup & O'Brien, Archts., Winston-Salem.

N. C., Winston-Salem.—Archie Taylor will erect residence; English style; stucco exterior; 7 rooms; hot-water heat; cost \$3600; Northup & O'Brien, Archts., Winston-Salem.

S. C., Anderson.—A. P. Cates and E. E. Elmore will erect 4 cottages or apartment buildings. (See Stores.)

S. C., Anderson.—Rufus Fant will expend \$6000 to remodel residence on River St.; will move back 30 ft., construct 2 rooms and second story; colonial style.

S. C., Charleston.—John R. Thomas will erect residence at Bay and Rutledge Sts.; cost \$9000.

Tenn., Sewanee.—Dr. Walter Hullihen will erect residence; stone; shingle or tile roof; hot-water heat; oak floors; tiled bathroom; cost \$7000; Eugene H. Knight, Archt., 1134 Brown-Marx Bldg., Birmingham, Ala.

Tex., Dallas.—Joe Schepp will erect residence at 2335 S. Boulevard; 7 rooms; brick veneer; cost \$4500.

Tex., Dallas.—J. C. Crabtree will erect 2-story frame residence at 4903 Worth St.; cost \$4500.

Tex., Dallas.—G. J. Van Winkle will erect 7-room frame cottage at 407 N. Mont Clair St.; cost \$3000.

Tex., Houston.—Ed Sacks will erect six 4-room residences; cost \$5000.

Tex., San Antonio.—Jack W. Neal has plans by Atlee B. Ayres, Bedell Bldg., San Antonio, for residence; 9 rooms; hard-rock construction.

Va., Graham.—Deck Shrader will erect residence on Highland Ave.

Va., Graham.—R. G. Yost will erect residence.

Va., Hopewell.—E. I. du Pont de Nemours & Co. will erect 160 additional dwellings.

Va., Petersburg.—Geo. Bernard is having plans prepared by S. Daly Craig, Petersburg, for colonial brick residence at Filmore and Clinton Sts.

Va., Richmond.—Deck Shrader will erect 2 frame dwellings on Battery court and Bacon Rd.; cost \$6000.

Va., Richmond.—James Fox will erect 2-story brick residence; cost \$5000.

GOVERNMENT AND STATE

W. Va., Ronceverte.—Postoffice.—P. A. George & Co. will erect postoffice building; 2 or 3 stories.

HOSPITALS, SANATORIUMS, ETC.

Ky., Winchester.—Clark County Hospital Assn., R. M. Scobee, Prest., will erect hospital on Lexington Ave.; steam or hot-water heat; construction begins in early spring; architect not selected; cost \$12,000 to \$15,000. Address Mr. Scobee. (Lately noted.)

Miss., Jackson.—City contemplates issuing \$120,000 bonds to erect hospital. Address The Mayor.

N. C., Winston-Salem.—Forsyth County Commrs. plan to erect tuberculosis hospital to accommodate 12 to 20 patients.

Okla., Henryetta.—City, T. S. Williamson, Clerk, indefinitely postponed election on \$30,000 bonds for hospital. (Lately noted.)

Tenn., Memphis.—Baptist Memorial Hospital will erect second of three buildings originally planned; accommodate 125 patients; cost \$125,000; Perry C. Wilkes, Supt.

HOTELS

Fla., Courtland.—Sherrod Hotel Co. purchased building and will convert into hotel; about 20 rooms.

Fla., St. Petersburg.—Home Security Co. is reported to erect 4 additional stories to Home Security Building and convert entire structure, except banking quarters, into hotel; 100 rooms; private baths; construction begins April or May.

N. C., Lumberton.—Lumberton Hotel Co. is reported to erect hotel; 4 stories; 48 rooms; 54x92 ft.; 4 stores on lower floor.

Va., Petersburg.—Lavenstein Bros. will erect store and hotel building.

MISCELLANEOUS

Ala., Birmingham.—Clubhouse.—Birmingham Motor and Country Club, J. E. Shelby, Secy., will erect boathouse, dancing and skating pavilion.

Ark., Pine Bluff.—Clubhouse.—Pine Bluff Golf and Country Club opens bids about Feb. 15 to erect clubhouse, lately noted; ordinary construction; electric light; cost \$4000; Northup & O'Brien, Archts., Winston-Salem.

N. C., Winston-Salem.—Barrett Taylor will erect residence; English style; stucco exterior; 6 rooms; hot-water heat; cost \$3500; Northup & O'Brien, Archts., Winston-Salem.

N. C., Winston-Salem.—Archie Taylor will erect residence; English style; stucco exterior; 7 rooms; hot-water heat; cost \$3600; Northup & O'Brien, Archts., Winston-Salem.

S. C., Anderson.—A. P. Cates and E. E. Elmore will erect 4 cottages or apartment buildings. (See Stores.)

S. C., Anderson.—Rufus Fant will expend \$6000 to remodel residence on River St.; will move back 30 ft., construct 2 rooms and second story; colonial style.

S. C., Charleston.—John R. Thomas will erect residence at Bay and Rutledge Sts.; cost \$9000.

Tenn., Sewanee.—Dr. Walter Hullihen will erect residence; stone; shingle or tile roof; hot-water heat; oak floors; tiled bathroom; cost \$7000; Eugene H. Knight, Archt., 1134 Brown-Marx Bldg., Birmingham, Ala.

by Clinton Mackenzie, 15 Broadway, New York, for clubhouse at Pulaski Works; 2 stories; brick; 106x60 ft.; refrigerating system, etc.

RAILWAY STATIONS, SHEDS, ETC.

Fla., Manatee.—Seaboard Air Line Ry., W. H. Wells, Ch. Engr., Constr., Washington, D. C., is considering bids to erect frame building to replace burned structure; asbestos shingle roof; white waiting-room 20x25 ft.; colored waiting-room 13x25 ft.; office 10x28 ft.; freight room 25x60 ft. (Previously noted.)

N. C., Madison.—Southern Ry. Co., W. H. Wells, Ch. Engr., Constr., Washington, D. C., is considering bids to erect frame building to replace burned structure; asbestos shingle roof; white waiting-room 20x25 ft.; colored waiting-room 13x25 ft.; office 10x28 ft.; freight room 25x60 ft. (Previously noted.)

Va., Norfolk.—Norfolk & Western Ry., J. E. Crawford, Ch. Engr., Roanoke, Va., opens bids Jan. 27 to construct 2 warehouses at Lamber's Point; work to be let now for dredging, bulkhead and pier work, followed later by other necessary construction; bids received for any part of work separately and for entire construction of piers as whole; present work consists of about 1,500,000 yds. dredging, 9000 ft. bulkhead, 12,000 creosoted piles and about 4,000,000 ft. lumber; southbound pier 1200x220 ft.; northbound pier 800x220 ft.; creosoted pile and timber; steel sheds; flat built-up roofs; wood floors; slips between structures; four tracks on each pier; cost \$1,900,000. (Noted in November.)

Va., Newport News.—Chesapeake & Ohio Ry. Co., F. I. Calwell, Ch. Engr., Richmond, Va., has plans by B. F. Mitchell, Seaboard Bank Bldg., Norfolk, for brick office building and alterations to station. (Previously noted.)

W. Va., Charleston.—Norfolk & Western Ry., J. E. Crawford, Roanoke, Va., will erect \$5,000 station at Bluestone Junction.

W. Va., Wheeling.—Baltimore & Ohio R. R., F. L. Stuart, Ch. Engr., Baltimore, Md., is reported to expend \$25,000 to improve station and install restaurant; cut and arch partitions, providing restaurant 80x25 ft.

SCHOOLS

Ala., Huntsville.—City is having plans prepared by H. D. Breeding, 15 Watts Bldg., Birmingham, for school to replace burned structure; 2 stories; brick; stone trimmings; 9 classrooms and auditorium to seat 800; asbestos slate roof; steam heat; electric lights; cost \$18,000; contract let about March 1. (Lately noted.)

Tenn., East Chattanooga.—Trustees are having plans prepared by R. H. Hunt, Chattanooga, for \$50,000 school.

Tenn., Jacksboro.—Campbell County Commissioners will issue \$40,000 high-school and \$60,000 common-school bonds to consolidate rural schools.

Tenn., Knoxville.—City is having plans prepared for addition to Moses School; cost \$10,000. Address The Mayor.

Tex., Abilene.—School Board petitioned City Council for election on \$100,000 bonds to erect 4 ward schools and addition to high school.

Tex., Austin.—W. H. Cullen, Prest. of Austin School Board, receives bids until Jan. 26 to erect 2 eight-room ward schools in Drurying Park addition and on W. Lynne St.; plans and specifications at office of Dennis R. Walsh, Archt., Littlefield Bldg., Austin. (Previously noted.)

Tex., Brownsville.—City is having plans prepared by Atlee B. Ayres, Bedell Bldg., San Antonio, for 2-story-and-basement high school and 2 grammar schools; cost \$100,000. (Lately noted to have voted \$100,000 bonds.)

Tex., Corsicana.—School Board engaged H. O. Blanding, Corsicana, and Field & Clarkson, Fort Worth, as architects for Third Ward School; 2 stories; 6 rooms; brick; probably stone trimmings; cost \$18,000. (Lately noted.)

Tex., Denton.—Regents of College of Industrial Arts will erect \$140,000 dormitory and dining hall; construction to begin Feb. 15; F. M. Bralley, Prest.

Tex., Elm Mott.—Elm Mott Ind. School Dist. votes Feb. 5 on \$800 bonds to erect school. Address Dist. School Trustees. (Lately noted.)

Tex., Elmo.—Trustees have plans by H. G. Lindsey, Greenville, Tex., for lately-noted school to replace burned structure; 3 rooms; frame; shingle roof; jacketed stoves; bids opened Jan. 25; cost \$3500. Address A. W. Graham, Elmo. (See Machinery Wanted—School Equipment; Seating; Blackboards; Stoves.)

Tex., Fairbanks.—See Tex., Hockley.

Tex., Hockley.—Harris County Comms., Houston, will erect \$5000 school at Hockley. \$4000 school at Fairbanks, negro school in

Hall, noted damaged by fire at loss of \$71,000; James W. Cain, Prest. of College.

Miss., Clinton.—School Board, Prof. M. Latimer, Secy., Clinton, has plans by Emmett J. Hull, Daniel Bldg., Jackson, Miss., for consolidated school building; 2 stories and basement; about 52x83 ft.; ordinary construction; brick; fireproof stairs and corridors; asphalt shingle roof, except deck, which is composition; wood floors; steam heat; bids opened about Feb. 15.

Miss., Jackson.—City is having plans prepared by H. N. Austin, Jackson, for school; 2 stories; brick; stone trimmings; 8 classrooms; cost \$25,000.

N. C., Asheville.—Macedonia, Mt. Carmel and Burnam Heights Consolidated School Dist., voted \$12,000 bonds to erect high school near Craggy. Address Dist. School Trustees. (Lately noted.)

N. C., Mount Airy.—City plans to erect additional school. Address The Mayor.

S. C., Columbia.—A. C. Moore, Chrmn. School Comms., receives bids until Jan. 28 to erect school; separate bids on general contract, plumbing and heating and ventilating; plans and specifications at office of J. H. Sims, Archt., Carolina National Bank Bldg., Columbia. (Lately noted.)

S. C., Greenville.—City is having plans prepared by J. E. Surrine, Greenville, for graded and high school; plans ready for distribution about Feb. 10. (Previously noted.)

S. C., Mayo.—Mayo School Dist. votes Jan. 22 on \$5000 bonds to erect brick school; H. T. Cash, F. H. Hardin and M. S. Stone, Trustees.

S. C., Roebuck.—Roebuck School Dist. will probably vote on \$5000 bonds to erect school. Address County Board of Education, Spartanburg, S. C.

Tenn., Bristol.—City opens bids Jan. 25 to erect ward school on Second South St.; 58x30 ft.; brick walls; wood joist floor; metal slate roof; direct and indirect steam heat; electric light; cost about \$16,000; Clarence B. Keneff, Archt., Bristol. (Previously noted to have voted bonds.)

Tenn., Cookeville.—Asmus & Norton, Architects, 634 Stahlman Bldg., Nashville, Tenn., receive bids until Jan. 25 for work on boys' and girls' dormitories (1 contract); remodeling administration building (1 contract), or contractors may bid on work as whole; completion by Sept. 1. (Previously noted.)

Tenn., East Chattanooga.—Trustees are having plans prepared by R. H. Hunt, Chattanooga, for \$50,000 school.

Tenn., Jacksboro.—Campbell County Commissioners will issue \$40,000 high-school and \$60,000 common-school bonds to consolidate rural schools.

Tenn., Knoxville.—City is having plans prepared for addition to Moses School; cost \$10,000. Address The Mayor.

Tenn., Jackson.—School Board petitioned City Council for election on \$100,000 bonds to erect 4 ward schools and addition to high school.

Tenn., Austin.—W. H. Cullen, Prest. of Austin School Board, receives bids until Jan. 26 to erect 2 eight-room ward schools in Drurying Park addition and on W. Lynne St.; plans and specifications at office of Dennis R. Walsh, Archt., Littlefield Bldg., Austin. (Previously noted.)

Tenn., Brownsville.—City is having plans prepared by Atlee B. Ayres, Bedell Bldg., San Antonio, for 2-story-and-basement high school and 2 grammar schools; cost \$100,000. (Lately noted to have voted \$100,000 bonds.)

Tenn., Corsicana.—School Board engaged H. O. Blanding, Corsicana, and Field & Clarkson, Fort Worth, as architects for Third Ward School; 2 stories; 6 rooms; brick; probably stone trimmings; cost \$18,000. (Lately noted.)

Tenn., Denton.—Regents of College of Industrial Arts will erect \$140,000 dormitory and dining hall; construction to begin Feb. 15; F. M. Bralley, Prest.

Tenn., Elm Mott.—Elm Mott Ind. School Dist. votes Feb. 5 on \$800 bonds to erect school. Address Dist. School Trustees. (Lately noted.)

Tenn., Elmo.—Trustees have plans by H. G. Lindsey, Greenville, Tex., for lately-noted school to replace burned structure; 3 rooms; frame; shingle roof; jacketed stoves; bids opened Jan. 25; cost \$3500. Address A. W. Graham, Elmo. (See Machinery Wanted—School Equipment; Seating; Blackboards; Stoves.)

Tenn., Fairbanks.—See Tex., Hockley.

Tenn., Hockley.—Harris County Comms., Houston, will erect \$5000 school at Hockley. \$4000 school at Fairbanks, negro school in

Hall, noted damaged by fire at loss of \$71,000; James W. Cain, Prest. of College.

Tex., Houston.—City will erect school at Lyons and Gregg Sts.; 72x62 ft.; 2 stories; tar and gravel roof; cost \$15,000; gravity system steam heat, \$1000; Maurice J. Sullivan, City Archt., Houston; bids opened Jan. 17. (Lately noted.)

Tex., Ross.—Ross School Dist. votes Feb. 12 on \$10,000 bonds to erect school; Geo. N. Denton, County Judge, Waco, Tex.

Va., Norfolk.—School Board authorized Building and Properties Com. to select architect for 12-room elementary school at Spotswood and Claremont Aves.

Va., Pembroke.—Trustees plan to erect brick school in summer.

STORES

Ala., Birmingham.—Tony Tripp will erect store building; 2 stories; 25x100 ft.; brick; tar and gravel roof; steam heat; cost \$8500; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ala., Birmingham.—Mrs. Arbelia Morris will erect store building; 2 stories; 50x160 ft.; brick; tar and gravel roof; tile vestibule; steam heat; plate-glass front; cost \$11,000; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham; taking bids.

Ark., Mulberry.—I. L. Hight purchased hotel and will convert into business building.

D. C., Washington.—East Gate Lodge No. 34, A. F. and A. M., will erect temple and store building. (See Association and Fraternal.)

Fla., Avon Park.—N. G. Langford will rebuild store noted damaged by fire at loss of \$5000. Fla., Jacksonville.—Florida Engineering & Construction Co. will erect 2-story brick building on E. Bay St.; cost \$10,000. Ga., Atlanta.—S. A. Albright will erect 3 stories; brick; flat roof; cost \$10,000; Walker & Chase, Archts., 533 Candler Bldg., Atlanta. (Previously noted.)

Ga., Atlanta.—Walter R. Brown will expand several thousand dollars to remodel and improve building at Pryor and Hunter Sts. .

Ga., Griffin.—Thos. J. Brooks will remodel 2-story building for drug store and offices; construct new front, etc.

Ga., Macon.—Mrs. D. M. Derrett will erect brick store building.

Ga., Tifton.—C. Goodman Estate will erect building at Third and Railroad Sts.; 5 rooms; 25x50 ft.

Ga., Tifton.—Central Grocery Co. will probably convert building into stores. (See Warehouses.)

Md., Frederick.—Geo. L. Kaufman acquired Kunkel property and will convert into store and apartment-house; steam heat; electric lights; completion April 1.

Mo., Kansas City.—Mrs. Emma J. Meyer will erect building at 2017-21 Grand Ave. to be occupied by Wagener Paint & Glass Co.; 6 stories and basement; fireproof; concrete, brick and terra-cotta front; cost \$100,000; construction to permit erecting 2 additional stories.

Mo., Kansas City.—John Doherty will erect business building at 1317 Grand Ave.; 4 stories; reinforced concrete; front of light gray terra cotta; iron window frames and verde antique sash; Madore & Birdsall, Archts., Kansas City.

Mo., St. Louis.—Mrs. Clementine Hellman will erect building at 1413 Washington Ave. to be leased to Aubrey Hart, Louis B. Singer and Marcus Baumol; 1 story and basement; site 27x37 ft.; later plans to increase height to 7 stories and basement; ultimate cost \$150,000.

N. C., Lumberton.—Lumberton Hotel Co. is reported to erect store and hotel building. (See Hotels.)

N. C., Whiteville.—J. B. Schuiken will erect brick building to replace lately-burned structure.

N. C., Whiteville.—W. V. Beaton will erect 2-story brick building to replace lately-burned structure.

N. C., Whiteville.—W. V. Beaton will erect 2-story brick building to replace lately-burned structure.

Ola., Ringling.—Charles Adams, Ardmore, Okla., will erect brick business building; frontage 50 ft.

Ola., Ringling.—A. McCrory will erect brick business building on Main St.

Ola., Tulsa.—John M. and T. L. Townley will erect 2-story business block.

S. C., Anderson.—David Dooley will erect 2-story store building; 25x60 ft.; brick.

S. C., Anderson.—A. P. Cates and E. E. Elmore will erect brick store building, also apartment building or 4 cottages; construction begins about Apr. 1. (Lately noted.)

S. C., Clover.—E. B. Price plans to erect building.

S. C., Sumter.—O'Donnell & Co. are having plans prepared for store building. (Noted in December to replace building destroyed by fire.)

Tex., Bridgeport.—P. A. Boaz will erect building to replace structure lately burned.

Tex., Dallas.—Higginbotham-Bailey-Logan Co. will erect addition to building at Jackson and Lamar Sts.; 3 stories; 50x300 ft.; \$90,000 sq. ft. floor space; basement under both structures; concrete and reinforced steel; brick exterior; white terra-cotta trimmings; 4 elevators; 8 stairways; fireproof; steam heat; private electric light and power plant in basement for both structures; cost \$200,000. (Lately noted.)

Tex., El Paso.—Frank Ainsa will erect store building on Mesa Ave.; 1 story; 40x120 ft.; ordinary construction; cost \$5000; bids opened Jan. 15.

Tex., Floresville.—W. F. Schultz contemplates erecting mercantile building.

Tex., Galveston.—Galveston Council 367, Knights of Columbus, will convert building into stores and lodgerooms. (See Association and Fraternal.)

Tex., Gonzales.—O. A. Neumann will erect concrete block store building on N. St. Paul St.

Tex., Rockdale.—T. M. Williams will erect 2-story brick business building; 30x125 ft.; upper floor for offices.

Tex., San Antonio.—M. J. Lohert will erect store building; brick; cost \$5000.

Tex., Seadrift.—W. N. Cowards will erect building; 2 stories; brick; lower floor for store; upper floor telephone exchange and lodgerooms.

Tex., Waco.—Walter G. Lacy will erect business building to be occupied by R. S. Kilgore; 25x75 ft.; 1 story; cost \$5000.

Va., Petersburg.—Lavenstein Bros. will erect building; 3 stories; lower floor stores; upper floors hotel; S. Daly Craig and Mrs. Isabel, Asso. Archts., Petersburg.

THEATERS

Ala., Huntsville.—W. T. Hutchens, 314 Mill St., has plans by E. L. Love, Huntsville, for theater, warehouse and office building at Clinton and Jefferson Sts.; 60x140 ft.; brick; metal or Carey roofing; wood floors; steam heat; electric lights; hand elevator; bids opened latter part of January; cost \$30,000. (Lately noted.)

Ky., Lexington.—Higgin estate, Chas. H. Berryman, Mgr., will rebuild Ben Ali Theather, noted damaged by fire at loss of \$80,000.

WAREHOUSES

Ala., Birmingham.—W. H. Irwin will erect warehouse; 2 stories; 20x140 ft.; brick; mill construction; tar and gravel roof; contract let about Feb. 1; John D. Gullett, Archt., Birmingham.

Ala., Huntsville.—W. T. Hutchens, 314 Mill St., will erect warehouse, office and theater building. (See Theaters.)

Ala., Montgomery.—H. M. Hobbs Grocery Co. will erect warehouse; 30x50 ft.; capacity of 10,000 bus. corn; cost \$3500; cost of equipment, including shellers, etc., \$7500.

Ga., Tifton.—Central Grocery Co. will erect warehouse; 1 story; fireproof; cost \$15,000; site 75x250 ft.; probably convert present structure into stores.

Md., Baltimore.—Monumental Storage Co., 1110-16 Park Ave., is having plans prepared by C. M. Anderson, 324 N. Charles St., Baltimore, for addition to warehouse; 6 stories; 70x65 ft.; brick; fireproof; contractors estimating are Consolidated Engineering Co., Calvert Bldg.; D. M. Andrew Co., Mt. Vernon Ave. and 26th St.; B. F. Bennett Building Co., 123 S. Howard St.; Singer-Pentz Co., 600 Equitable Bldg.; A. F. West, 15 E. Fayette St.; Price Concrete Construction Co., 225 St. Paul St.; all of Baltimore.

Mo., Kansas City.—Lowe Bros. Co., Dayton, Ohio, will erect warehouse on Broadway near 23d St.

N. C., Wilson.—Wilson Commission & Warehouse Co., lately noted to erect warehouse, will not erect building, but lease structure already erected.

Ola., Ringling.—Creel Grain Co. will erect grain and produce house.

Tex., San Antonio.—Pioneer Flour Mills will erect warehouse; cost \$6000.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ala., Birmingham.—W. W. Coghill let contract to E. C. Bowman, Birmingham, to erect 2 apartment buildings, each to contain four 6-room suites; 2 stories; brick veneer; slate roof; steam heat; tiled porches and bathrooms; hardwood floors; cost \$20,000; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

D. C., Washington.—Leo Simmons let contract to Cozzens Bros., 729 15th St. N. W., and Melton Construction Co., 1012 H St. N. W., Washington, to erect apartment-house at 220-32 California St. N. W.; 5 stories; 120x125 ft.; "U" shape with court in center; rough texture brick exterior with limestone trimmings and wrought-iron work; 14 Ites; ornamental towers at each end of roof; marble lobby; cost \$135,000; Claugton West, Archt., 1416 Chapin Ave. N. W., Washington.

D. C., Washington.—Rebecca Levy let contract to M. Gumenick, 1228 9th St. N. W., Washington, to erect 2-story brick flat at 2805 M St. N. W.; cost \$7500; Geo. T. Santymers, 216 Kenos Bldg., Washington.

Ga., Columbus.—Bibb Mfg. Co. let contract to Harvey Lumber Co., Columbus, to erect 40 tenement-houses.

Tenn., Nashville.—Dunraven Apartment Co. let following contracts for erection of apartment-house at 23d Ave. and Elliston Pl.: Foundation, concrete and excavation work; M. A. Lightman Co.; brick work, J. B. Patton; plumbing and heating, J. M. Gallagher; sheet metal, roofing and the, Phillips & Buttorn; carpentry, W. M. Davis; glazing, Southern Door & Glass Co.; electric wiring and fixtures, Braid Electric Co.; painting, S. J. Ayers.

Va., Danville.—Dr. T. W. Edwards let contract to Vance & Hunter, Danville, to erect apartment-house on W. Main St.; 46x81 ft.; ordinary construction; slate roof; joist floor construction; cost \$12,000; heating plant, \$1000; Beard & Cardwell, Archts., Danville.

ASSOCIATION AND FRATERNAL

Md., Baltimore.—Arundel Lodge, I. O. O. F., has plans by and let contract to Seward L. Coulbourne, Brooklyn, Md., to erect lodge building on Patapsco Ave.

Miss., D'Lo.—Finkbine Lumber Co. let contract to C. O. Eure, Hattiesburg, Miss., to erect Y. M. C. A. building; 60x80 ft.; mill construction; composition roof; electric lights (connection with local plant); hand elevator; cost \$5000; steam heat, \$1500; Overstreet & Spencer, Archts., Jackson, Miss. (Lately noted.)

BANK AND OFFICE

Mo., St. Louis.—E. C. Simmons let contract to W. M. Sutherland Building & Construction Co., Syndicate Trust Bldg., St. Louis, at \$81,136, to erect bank building at Broadway and Washington St.; plans by Guy C. Mariner, 1895 Chemical Bldg., St. Louis, call for building 2 stories; 56x87 ft.; steel construction; General Roofing Co.'s 5-ply roofing over concrete; heat and light by Union Electric Co., St. Louis; elevators, vaults and all bank fixtures separate. Address Contractor. (Noted in Dec.)

N. C., Winston-Salem.—B. S. Womble let contract to erect store and office building. (See Stores.)

Va., Hopewell.—M. A. Finn let contract to erect store and office building. (See Stores.)

Va., Hopewell.—Virginia State Bank of Hopewell let contract to Harrison Construction Co., Hopewell, to erect bank and office building on Broadway; 3 stories; 25x70 ft. (Lately noted.)

CHURCHES

Fla., St. Augustine.—Colored Baptist Church let contract to Chas. Leyvraz, St. Augustine, to erect building to replace burned structure; brick; fireproof; 50x60 ft.; 2 stories; metal shingle roof; cost \$6500; F. A. Henderich, Archt., St. Augustine.

Ga., Stillmore.—Methodist Church let contract to Towler & Saye, Metter, Ga., to remodel building; 46x60 ft.; brick and wood; metal shingle roof; stoves; electric lights; cost \$3500; sketches by contractor.

Tenn., Memphis.—Trinity Baptist Church let contract to Max Halpelin, 810 McLemore Ave., Memphis, to erect building; work includes brick work, concrete work, stone trimmings, electric lights, metal ceiling, slate roof, pews, etc.; cost \$34,500.

Tex., Galveston.—Adoue Seamen's Bethel, Rev. J. F. Sarner, chaplain, let contract to Coyle Bros., Galveston, to erect residence for chaplain; 2 stories; 8 rooms; cost \$6000; Stowe & Stowe, Archts., Galveston.

CITY AND COUNTY

N. C., Durham.—Jail.—County Comr. let contract to erect courthouse and jail. (See Courthouses.)

Tex., Lamesa.—Jail.—Dawson County Commissioners let contract to erect courthouse and jail. (See Courthouses.)

COURTHOUSES

N. C., Durham.—County Comr. let contract at \$221,500 to Geo. A. Fuller Co., Muncy Bldg., Washington, D. C., to erect courthouse and jail, and at \$35,000 to Pauly Jail Building Co., St. Louis, for steel work in jail; fireproof; 5 stories; 156x72 ft.; steel frame; stone and granite; tile roof; steel and concrete floor; low-pressure steam heat to cost \$10,000; electric light, \$4000; 2 electric elevators, \$7000; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washington, D. C. (Lately noted.)

N. C., Newbern.—Craven county let contract to Rhodes & Underwood, Newbern, to erect addition to courthouse on Craven St.; about 40x50 ft.; fireproof; slate and tin roof; cost \$18,500; heating plant, \$750; lighting, \$450; Deancy & Smallwood, Archts., 569 5th Ave., New York city. Address contractor. (Lately noted.)

Tex., Lamesa.—Dawson County Commissioners let contract to Ralph P. Taylor, Texarkana, Tex., to erect courthouse and jail; fireproof; composition roof; no heating or lighting plants or elevators; cost \$44,250; Sanguinet & Staats, Archts., Fort Worth. Address Contr. (Lately noted.)

DWELLINGS

Ala., Birmingham.—Wm. M. Spencer let contract to Joy-Marriott Construction Co., Birmingham, to erect residence; 2 stories; brick; cost \$6000.

Ala., Birmingham.—H. F. Davis will erect bungalow; frame; asphalt shingle roof; floors; furnace heat; ordinary construction; J. E. Farrell, Contr., Birmingham; Miller & Martin, Archts., Title Guarantee Bldg., Birmingham.

Ala., Birmingham.—C. J. Perry of Du Pont Powder Co. let contract to James Blomeley, Ensley, Ala., to erect residence on Shad Mountain near Oxmoor; frame; 1½ stories; semi-bungalow style; furnace heat; hardwood floors; garage; barn; domestic water-works and electric-lighting systems; private sewerage system; cost \$6500; Sallie & McWhinney, Archts., Woodward Bldg., Birmingham.

Ala., Florence.—C. W. Ashcraft let contract to H. B. Austin, Florence, to erect residence; Spanish colonial style; brick veneer; James G. Gaunt, Archt., Florence. (Lately noted as Florence, S. C.)

D. C., Washington.—Boss & Phelps, Inc., 714 14th St. N. W., let contract to Harry K. Boss, same address, to erect 2 dwellings at 3921-23 Morrison St. N. W.; semi-detached; brown-gold brick foundation; first story white clapboards; second story golden shingles; conservatories; cost \$14,000; J. Albert Groot, Archt., 4408 Kansas Ave. N. W., Washington.

D. C., Washington.—Davis Derzavitz let contract to C. A. Langley, 310 12th St. N. W., Washington, to erect dwelling at Kanawha St. and Connecticut Ave.; 3 stories; colonial style; 10 rooms, attic and cellar; cost \$10,000; completion May 1; F. B. Pyles, Archt., 606-08 Evan Bldg., Washington.

Fla., Jacksonville.—T. S. Roberts let contract to R. J. Gallespie, Jacksonville, to erect residence at Riverside Ave. and Gilmore St.; brick veneer on frame construction; terra-cotta tile roof; 40x48 ft.; cost \$10,000.

Fla., St. Augustine.—Mrs. Joseph let contract to E. J. Masters to erect residence to replace Joseph House; colonial style; Fred A. Henderich, Archt., St. Augustine.

Fla., St. Petersburg.—F. R. Kenedy let contract to erect residence in Grandview Park; 2 stories; cost \$4000.

Fla., Tampa.—J. A. M. Grable, Jr., 1913 Dekle Ave., let contract to Logan Bros., Tampa, to erect residence in West Hyde Park; 38x61.6 ft.; ordinary construction; composition shingle roof; cost \$3000; Bonfoey & Elliott, Archts., Tampa.

Fla., West Palm Beach.—W. S. Whitmore let contract to G. M. McGill to erect residence; 2 stories; brick; 2-story garage and servant's building in rear; cost \$4000 to \$5000; F. W. Williams, Archt.

Md., Worthington Valley.—C. Wilbur Miller, Prest. of Davison Chemical Co., Garrett Bldg., Baltimore, let contract to Glad-

felter & Chambers, 729 Roland Ave., Baltimore, to erect residence and outbuildings in Worthington Valley; James R. Edmunds, Archt., 12 E. Read St., Baltimore.

Miss., Clarksdale.—W. D. Cutrer let contract to Wm. Morford, Clarksdale, to remodel residence; will erect additional story, etc.; cost \$4000; Chas. Pfeil, Archt., Memphis, Tenn.

Mo., Kansas City.—Mrs. C. Friedrichsen let contract to Jas. O. Wade, Kansas City, to erect residence at 59th and Central Sts.; stucco and Carthage stone; red tile roof; pergola to garage in rear; cost \$12,500; plans by owner, but S. R. Frink employed as architect to supply technical details. (Lately noted under Stores.)

N. C., Asheville.—Dr. W. E. Glenn let contract to erect dwelling; 42x60 ft.; mill construction; composition or shingle roof; hot-water heat; electric light; cost \$7000.

S. C., Gaffney.—John White let contract to Ramsey & Son, Gaffney, to erect 7-room cottage at Cherokee Ave. and 5th St.

Tenn., Lebanon.—H. T. Buttnett let contract to Robt. S. White to erect bungalow; Geo. D. Waller, Archt., Nashville. (Lately noted.)

Tex., Dallas.—M. W. Branch will erect 6-room frame cottage at 106 N. Mont Clair St.; cost \$3000; mill construction; shingle roof; gas and grate heating; let contract to Broadway Construction Co., Dallas.

Tex., Galveston.—Hans Guldman is reported to have let contract to H. J. J. Thiesen, Galveston, to erect 12 three-room frame cottages; cost \$3000.

Tex., Galveston.—Adoue Seamen's Bethel let contract to erect dwelling. (See Churches.)

Tex., Houston.—A. E. Kiesling let contract to Chris J. Miller, Houston, to erect dwelling at Rose St. and Montrose Pl.; 2 stories; hollow tile and brick veneer; clay the roof; hot-air heat; cost \$20,000; Alfred C. Finn, Archt., Houston. (Lately noted.)

Tex., Houston.—Thos. H. Ball let contract to E. L. Crain, Houston to erect dwelling at Richmond Rd. and Montrose Blvd.; 2 stories; frame; shingle roof; hot-air heat; cost \$12,000; Alfred C. Finn, Archt., Houston.

Va., Norfolk.—A. F. Penzold let contract to R. M. Price, Norfolk, to erect residence; 2 stories; brick and frame; cost \$5500.

Va., Norfolk.—H. I. Britton let contract to J. W. Sanders, Norfolk, to erect 2 frame residences at 503-05 34th St.; cost \$6700.

Va., Norfolk.—E. R. Hogg let contract to J. W. Saunders, Norfolk, to erect 2-story frame residence on Baldwin Ave.; cost \$3000.

Va., Richmond.—L. A. Umlauf will erect three 2-story frame dwellings on Fendall and Griffin Sts.; cost \$7250; I. T. Skinner, Archt.; W. S. Barnett, Contr., both of Richmond.

W. Va., Wheeling.—Harry Becker, 122 Wood St., let contract to James L. Welton, 1114 Market St., Wheeling, to erect residence at 231 Jacob St.; 16x70 ft.; rubber shingle roof; cost \$3400; natural gas and Stanton heater, \$155; other contracts let are: Foundation, H. L. Seabright; roofing, Adkins Roofing Co.; plaster, M. Falvey; plumbing, J. W. Plants, all of Wheeling. (Lately noted.)

GOVERNMENT AND STATE

Ga., Savannah.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Act. Supvr. Archt., Washington, D. C., let contract at about \$5000 to J. M. Shappell, Philadelphia, Pa., to repair Federal building; Marion Lucas, Custodian. (Previously noted.)

HOSPITALS, SANATORIUMS, ETC.

Miss., D'Lo.—Finkbine Lumber Co. let contract to C. O. Eure, Hattiesburg, Miss., to erect hospital; 60x80 ft.; mill construction; composition roof; electric lights (connection with local plant); hand elevator; cost \$6000; steam heat \$1500; Overstreet & Spencer, Archts., Jackson, Miss. (Lately noted.)

Tex., Austin.—State let contract through Atlee B. Ayres, Archt., San Antonio, to Walsh & Burney, San Antonio, to erect hospital at Confederate Woman's Home; also let contract for plumbing, heating and wiring to John L. Martin, Austin; 2 stories and basement; fireproof; reinforced concrete; pine interior woodwork; terra-cotta outside walls stuccoed; cement floors; gravel roof; elevator; steam heat; has \$20,000 appropriation. (Lately noted to have rejected all bids.)

HOTELS

Ga., Summerville.—Murphy & Henderson Co. let contract to erect store and hotel. (See Stores.)

S. C., Spartanburg.—Longest & Tessier Co., Greensboro, N. C., general contractors to

erect Spartanburg Hotel, let following sub-contracts: Excavating, W. D. Pearson; lumber, C. K. Callahan; both of Spartanburg; terra-cotta, New Jersey Terra-Cotta Co.; gypsum partition blocks, Keystone Fireproofing Co.; both of New York; structural steel, Virginia Bridge & Iron Co.; ornamental iron, Roanoke Bridge & Iron Co.; both of Roanoke, Va.; elevators, Otis Elevator Co., Atlanta, main office, New York; terra-cotta partition blocks, Chattanooga (Tenn.) Sewer Pipe & Fire Brick Co.; plastering, W. M. Long, Greensboro, N. C.; brick, Kingsport Brick Corp., Johnson City, Tenn.; cement, Clinchfield Portland Cement Co., Kingsport, Tenn.; reinforcing steel, Southern Engineering Co., Charlotte, N. C.; plans by Chas. M. Robinson, Inc., Times-Dispatch Bldg., Richmond, Va., call for structure 70x170 ft.; 6 stories and basement; fireproof; Barrett specification roof; concrete floors; city lighting; cost \$150,000.

Tex., Beaumont.—Jefferson Hotel Co. let contract to King Lumber Co., Charlottesville, Va., to erect lately-mentioned Hotel Jefferson at Laurel and Alamo Sts.; 10 stories; 50x140 ft.; reinforced concrete construction; ornamental terra-cotta and enamel brick finish; fireproof; about 157 sleeping-rooms, 20 sample-rooms, dining hall to seat 250; circular rotunda with marble staircase; Texas hardwood interior finish; 106 ft. high; roof garden; private steam-heating plant, ice plant, bakery and telephone exchange; electric passenger and freight elevators; composition and slate roof; cost \$250,000; Cooke & Co., Archts., Theater Bldg., Houston, Tex. Address Contractor. (See Machinery Wanted—Building Materials.)

MISCELLANEOUS

Ark., Helena.—Stable.—N. Straubs' Sons let contract to erect brick building for sale stable.

Miss., Vicksburg.—Clubhouse.—B. B. Literary Assn. let contract to Burkes Construction Co., Hattiesburg, Miss., at \$54,330 to erect clubhouse; plans by Leon Weis, 29 Maison Blanche, New Orleans, call for structure 40x120 ft.; ordinary construction; fireproof annex; concrete and composition roof; ordinary tile and promenade floors; rigid steel lighting installation; cost \$30,000.

S. C., Columbia.—Clubhouse.—Ridgewood Country Club will rebuild burned clubhouse; 150x75 ft.; brick and frame; tile roof; cement and wood floors; steam or hot-water heat; dumbwaiters; city lights; cost \$15,000; let following contracts: General contract, Frank D. McNulty; plumbing and heating, W. B. Guilmartin & Co.; water system, Terrells-Childs Electric Co.; all of Columbia; Urquhart & Johnson, Archts., Columbia. (Previously noted.)

N. C., Lexington.—Stable and Garage.—Dermon Sheenwell let contract to D. K. Clegg, Lexington, to erect garage and sales stable; 60x100 ft.; 2 stories; ordinary brick construction; rough-texture brick front; tar and gravel roof; cost \$4500; Northup & O'Brien, Archts., Winston-Salem, N. C.

RAILWAY STATIONS, SHEDS, ETC.

S. C., Spartanburg.—Southern Ry. Co., W. H. Wells, Ch. Engr., Washington, D. C., let contract to J. P. Pettyjohn & Co., Lynchburg, Va., to erect express building, including warehouse and office; brick; tile roof; 36x60 ft.; construction to begin on completion of freight terminals now under construction.

Tex., Beaumont.—Southern Pacific system let contract to Wm. A. Brunt, Houston, to construct umbrella sheds at station; 12x50 ft.; cost \$5000. (Previously noted.)

Va., Lynchburg.—Schools.—Schools to be erected by Wm. W. Houston Institute & Ferguson.

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to John Grewe Contracting Co., St. Louis, to erect parochial school; fireproof; composition roof; steam heat; electric wiring; cost \$100,000; subcontractors include Elliott & Barry, C. O. Smith Plumbing Co., and Guaranteed Electric Co.; all of St. Louis; Barnett, Haynes & Barnett, Archts., St. Louis. (Lately noted.)

Mo., St. Joseph.—School Trustees let contract to Wagenknecht & Walther, Wathena, Kan., to erect gymnasium at Benton High School, South St.; cost \$40,000.

Tex., Austin.—Van Horn-Shaw Construction Co., Fort Worth and Austin, general contractor to erect high school, let following sub-contracts: Cement, Trinity Portland Cement Co., Dallas, Tex.; form lumber, Calcasieu Lumber Co., Austin; gravel, San Marcos Gravel Co., San Marcos, Tex.; reinforcing steel metal lath and Florette, Trussed Concrete Steel Co., Youngstown, O.; structural steel, Texas Carnegie Assn., Galveston, Tex.; sash, Simplex Window Co., San Francisco, Cal.; millwork, Victoria Lumber Co., Shreveport, La.; plaster, United States Gypsum Co., Kansas City, Mo.; all labor, including plastering, painting, and probably tile and terrazzo done by general contractor; roofing contract not let; 20x150 ft.; reinforced concrete frame; Truscon floor and roof construction; brick facing; terra-cotta trim; Barrett specification roofing; vacuum steam heat; conduit wiring; cost \$96,000; Dennis R. Walsh, Archt., Austin.

Tex., El Paso.—School Board let contract at \$61,233 to Kroeger, Mayfield & Shaw, Monta and Gramma Sts., El Paso, to erect second addition to Alta Vista School, this being central feature and auditorium of plant; heating contract let at \$11,070 to Elliott Engineering Co., Mills Bldg., El Paso; general contract includes plumbing, wiring, etc.; Trost & Trost, Archts., Mills Bldg., El Paso. (Lately noted.)

Tex., El Paso.—External Com. of School Board let contract to construct concrete outdoor stadium at high school to J. F. Woodward Jr., at \$13,200; plans by Trost & Trost, Archts., Mill Bldg., El Paso, call for structure 300x390 ft.; oval running track 1/4 mi. long; reinforced concrete seats; 17 tiers, rising to height of 30 ft. Address architect. (Previously noted.)

Tex., El Paso.—Wm. M. Rice Institute, Edgar Odell Lovett, Prest., let contract at \$88,900 to Horton & Horton, Houston, to erect south wing to residential group No. 2; completion in September; 220x42 ft.; 3 stories and tower; Bedford limestone and pink "Brady" brick, with exterior stucco and marble trimmings; quarry tile floors; Denison tile walls on second and third floors; Spanish tile roof; fireproof; steam heat and electric lights from central plant by tunnel system; connected with present structure by cloistered arcades; construction in charge of Wm. Ward Watkins, 1106 Seaplan Bldg., Houston, instructor in architecture at Rice Institute and local representative of Cram & Ferguson, Archts., Boston and Houston. (Lately noted.)

Tex., Houston.—Wm. M. Rice Institute, Edgar Odell Lovett, Prest., let contract at \$88,900 to Horton & Horton, Houston, to erect south wing to residential group No. 2; completion in September; 220x42 ft.; 3 stories and tower; Bedford limestone and pink "Brady" brick, with exterior stucco and marble trimmings; quarry tile floors; Denison tile walls on second and third floors; Spanish tile roof; fireproof; steam heat and electric lights from central plant by tunnel system; connected with present structure by cloistered arcades; construction in charge of Wm. Ward Watkins, 1106 Seaplan Bldg., Houston, instructor in architecture at Rice Institute and local representative of Cram & Ferguson, Archts., Boston and Houston. (Lately noted.)

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STORES

Ala., Birmingham.—Eneas Elkralle let contract to B. F. Lee, Birmingham, to erect \$400 building at 6th Ave. and 22d St.

Fla., Tampa.—J. M. Harvey, Prest. Bank of Commerce, let contract to James McGucken, Tampa, to erect business building; 2 stories; cost \$7000; Bonfey & Elliott, Archts., Tampa.

Ga., Atlanta.—Hugh Richardson let various subcontracts in connection with erection of theater and store building. (See Theaters.)

Ga., Atlanta.—Mrs. M. A. Thompson let contract to M. G. Norris, Atlanta, to alter and repair building at 622 S. Pryor St.; cost \$3000.

Ga., Summerville.—Murphy & Henderson Co. let contract to Frank McGinnis to erect store and hotel building on west side Broad St.; 40x70 ft.; ordinary construction; Carey roofing; cost \$5000.

Mo., St. Louis.—Beaumont Real Estate & Mercantile Co. let contract to Julius H. Wise, 319 Victoria Bldg., St. Louis, to erect mercantile building at 2806 Locust St.; 3 stories; mill construction; composition roof; heating and lighting undecided; cost \$15,000; La Beaume & Klein, Archts., Chemical Bldg., St. Louis.

N. C., Winston-Salem.—J. E. Kenerly, Winston-Salem, to erect store and office building; 2 stories; mill construction.

N. C., Winston-Salem.—B. S. Womble let contract to J. E. Kenerly, Winston-Salem, to erect store building; 2 stories; ordinary construction; steel girders and columns; enamel brick; copper cornices; 50x90 ft.; Northup & O'Brien, Archts., Winston-Salem. (Mr. Womble and others previously noted contemplating erection of building.)

Tenn., Nashville.—Mrs. W. H. Leckhardt let following contracts for erection of 3 stores at 703-5-7 Seventh Ave.: Carpenter work, M. M. Graham & Co., \$7852; brick work, A. W. Hutchison, \$865; foundation, Foster & Creighton Co., unit price; cut stone, Foster & Creighton, \$210; plumbing and heating, East Side Plumbing Co., \$281; plastering, Maddux & Hutchinson, \$150; roof and metal ceilings, Phillips & Buttoff, \$1192; marble and tile work, Phillips & Buttoff, \$434; electric wiring, Herbrick & Lawrence, \$500; painting, F. J. Ehrhart, \$594; concrete work, Lewis Bros., \$126; elevator, Otis Elevator Co., \$200; glazing, hardware and fixtures, not awarded.

Va., Hopewell.—M. A. Finn let contract to Harrison Construction Co., Hopewell, to erect building at Hopewell St. and Broadway; 3 stories; brick; 50x110 ft.; basement; 8 stories; upper floors, offices; front of pressed brick; plate-glass show windows; prism lights; metal fireproof sashes; parapet walls around top; steam heat; electric light and telephone systems.

THEATERS

Ga., Atlanta.—Hugh Richardson let following sub-contracts to erect theater and store building at Forsyth and Luckie Sts.: Face brick, B. Mifflin Hood; millwork, Willingham-Tift; steel work, Virginia Bridge & Iron Co.; sheet metal and roofing, Kalb Bros.; plaster, Jacob Kendall; marble, tile, etc., Mion Bros.; all of Atlanta; seating, American Seating Co., Chicago, Ill.; plans by A. Ten Eyck Brown, Atlanta, call for building 2 stories; 80x100 ft.; brick and terra-cotta; cost about \$35,000; Kalb & McAuyley, general contractors on percentage basis; construction under way. (Previously noted.)

Md., Baltimore.—Isaac L. Hornstein let contract to Nathan Freedman, 1509 E. Fayette St., Baltimore, to erect moving-picture theater at 1627-29 Pennsylvania Ave.; 1 story; brick; 34x128 ft.; prepared slab flooring; concrete flooring; electric lights; cost \$10,500; Sparklin & Childs, Archts., Law Bldg., Baltimore.

WAREHOUSES

Ga., Eatonton.—E. B. Ezell has plans by and let contract to J. W. McMillan & Son, Milledgeville, Ga., to erect 2 warehouses; 70x150 ft. and 60x100 ft.; brick; metal roof; wood floors in larger structure, concrete in smaller; cost \$15,000. (G. K. Riley lately noted to erect cotton warehouse.)

Md., Baltimore.—Crown Cork & Seal Co., Guilford Ave. and Oliver St., has plans by Otto G. Simonson, Maryland Casualty Tower Bldg., Baltimore, and let contract to R. B. Mason, 308 W. Madison St., Baltimore, for storage building at Highlandtown branch; brick and reinforced concrete construction; 120x102 ft.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Agricultural Machinery.—Sterling Abstract & Sales Corp., 106 Reigler Bldg., Little Rock, Ark.—Data and prices on farm machinery.

Bags (Cotton).—Lake County Clay Co., H. E. Price, Supt., Okahumpka, Fla.—Cotton bags, each holding about 200 lbs. clay; bags usable for 2 or 3 shipments; buys large quantity (thousands) annually for its own use and 2 or 3 other companies.

Belts, Pulleys, etc.—See Foundry Equipment, etc.—Bons Emergency Mfg. Co.

Blackboards.—See School Equipment.—A. W. Graham.

Boilers.—Easton Machinery Co., Easton, Pa.—600 H. P. vertical water-tube boilers; in two units to carry not less than 100 lbs. steam; second-hand.

Boring Machine and Band Saw.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until Feb. 8 for delivering boring machine and band saw at Navy-yard, Puget Sound.

Brick.—See Building Materials.—King Lumber Co.

Brick Machinery.—See Clayworking Equipment.—Shale Paving Brick & Fireproofing Co.

Bridge Construction.—Kanawha County Court, D. A. Brawley, Prest., Charleston, W. Va., and Clay County Court, I. D. Nutter, Prest., Clay, W. Va.—Bids until Feb. 19 to construct steel highway bridge with masonry foundation between two counties across Elk River at point surveyed and located by Frank G. Burdett, County Road Engr., Charleston, near Queen Shoals; plans and specifications on file with Kanawha County Clerk at Charleston, Clay County Clerk, Clay, W. Va., and Frank G. Burdett, Engr., Courthouse, Charleston.

Bridge Construction.—John O. Johnson, City Clerk, Austin, Tex.—Bids until Jan. 18 to construct concrete bridge across Shoal Creek at State St.; for plans, specifications and information address M. C. Welborn, City Engr.; P. W. Powell, Supt. Streets and Public Improvements.

Bridge Construction.—City Clerk, Austin, Tex.—Bids until Feb. 7 to construct 5 reinforced concrete and 1 masonry arch bridges across Waller and Shoal creeks; estimated cost, \$45,000; work divided into 3 contracts, upon which separate tenders may be made for single acceptance, or bidders may bid on 2 or 3 contracts contingent on award of all work tendered; instructions to bidders, proposal blanks, specifications and plans on file with City Engr., Austin, and Bartlett & Ranney, Inc., Consult Engrs., San Antonio and Dallas, Tex.; additional copies may be purchased from City Engr. for \$10; P. W. Powell, Supt. Streets and Public Improvements.

Bridges (Concrete).—W. B. Moore, City Clerk, Miami, Fla.—Bids until Feb. 17 (postponed date) to construct 2 reinforced concrete bridges with bascule spans across Miami River; one at 12th St., other at Ave. D; quantities: 12th St. bridge, about 2700 cu. yds. concrete, \$50,000 lbs. structural steel and 90,000 lbs. reinforcing steel; Ave. D structure: 2100 cu. yds. concrete, 420,000 lbs. structural steel and 80,000 lbs. reinforcing steel; will consider bids for metal work in the 2 bascule spans as one contract; for erection of metal and construction complete of bridge at 12th St. as one contract; for erection of metal and construction complete of bridge at Ave. D as one contract; or for all 3 of these items as one contract; or for construction of each bridge as one contract; plans and specifications obtainable from Harrington, Howard & Ash, Consult. Engrs., 1012 Baltimore Ave., Kansas City, Mo.

Broom Machinery.—W. E. Royster, Secy. Mgr., Griffin & Spalding County Board of Trade, Griffin, Ga.—Catalogues and prices on broom machinery for daily minimum output 50 doz.

Building Materials.—King Lumber Co., Charlottesville, Va.—Prices on brick, structural steel, ornamental iron and bronze, desks for school to contain 2 rooms and hall.

Cotton Bagging Machinery.—W. Hopson Goodloe, Consult. Engr., American National Bank Bldg., Macon, Ga.—Catalogues and prices on machinery to manufacture cotton bagging from waste materials.

Cotton Waste.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 775,000 lbs. cotton waste, schedule 9201, various deliveries.

Cranes.—See Foundry Equipment, etc.—Bons Emergency Mfg. Co.

Decks.—C. P. Shirley, Secy. Avondale Dist. School Board, Avondale.—Prices on

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Dock.—Town of Dunedin, Fla., W. Y. Douglass, Clerk.—Bids until Feb. 4 to construct dock; plans and specifications from Jos. W. Drew, Engr.

Drainage.—Drainage Comms. Upper Coddle Creek Drainage Dist. for Iredell, Cabarrus and Rowan counties (J. A. Craven and others), Mooresville, N. C.—Bids until Jan. 24 at office Z. V. Turlington to construct about 11 mi. drainage ditch; plans and specifications on file with Clerk of Superior Court at Statesville.

Dredging.—Baltimore (Md.) Board of Awards, City Hall.—Bids until Jan. 26 to dredge harbor; specifications from office Harbor Board, Broadway Pier; H. K. May, Harbor Engr.

Electric Generator.—Town of Woodland, Ga., W. B. Jordan, Mayor.—Prices on 9 or 10 K. W. generator.

Electric Plant.—R. L. Gillett, New Port Richey, Fla.—Data and prices on equipment for village electric-light plant.

Electric Plant.—Kuttawa Milling Co., Wm. Eades, Mgr., Kuttawa, Ky.—Prices on electric lighting and power plant; to be installed about Sept.; batteries to have 48 hrs. storage capacity.

Electric Plant.—Moulton Water-works, H. C. Dunn, Gen. Mgr., Moulton, Ala.—15 or 20 H. P. crude oil engine (double cylinder only) for electric lighting; 15 K. W. compound wound generator, direct current belt-driven from above engine; switchboard for above generator; 2000 to 3000 ft. Nos. 6 and 8 wire for transmission line; send list and discount; 300 to 600 Tungsten lamps, 16 C. P., or same in any other standard make; electric meters; electrical fixtures for about 35 homes and same in stores; quote all prices f. o. b. Hillsboro, Ala.

Electrical Cable, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Feb. 1 for delivering electrical cable, pipe fittings, lumber, wrought pipe, railroad material and steel at Navy-yard, Washington, D. C. Apply for proposals to Bureau.

Electrical Equipment.—A. R. Cooper, Secy., Pine Bluff Golf and Country Club, Pine Bluff, Ark.—Electric-lighting equipment for \$12,000 clubhouse.

Electrical Equipment.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until Feb. 1 for interior communication cable, 380,000 ft. silicon bronze antenna wire, 400,000 ft. double conductor wire and 5000 ft. single conductor wire, schedule 9208; searchlight mirrors, schedule 9217; 14 radio transmitting sets, schedule 9212, and 15 radio transmitting sets, schedule 9214, all delivery Brooklyn; 50 lbs. uncut mica, miscellaneous hard rod and sheet rubber, 5 portable ventilating sets and 400 terminal tubes and fittings, schedule 9207, delivery Boston; radio receivers and wave meters (40 receivers, 48 meters), schedule 9213, delivery Washington; 200 lbs. sheet rubber, schedule 9211, delivery Puget Sound.

Hoist (Electric).—White Star Coal Co., R. B. Moss, Gen. Mgr., Pineville, Ky.—Electric hoist; for 2500-ft. incline with 58 per cent. maximum grade; to haul both employee and material; prompt delivery f. o. b. Wilhoit, Ky.

Hoist.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 300 ft. cotton fire hose, 3000 ft. rubber fire hose and 2000 ft. unlined linen fire hose, delivery Portsmouth, N. H.; 2500 ft. rubber garden hose, delivery Norfolk; all schedule 9204.

Houses (Ready to Build).—W. B. Crawford and W. S. Lindsey, Grundy, Va.—Addresses of manufacturers of ready-to-build houses.

Ice Machinery.—Waverly Mfg. Co., Waverly, Tenn.—Prices on equipment for ice plant, 10 to 20 tons daily capacity; to be operated in connection with established water-works and electric-light plant.

Ice-skating Rink.—W. B. Cragg, Gen. Mgr., Missouri Valley Cold Storage Co., 550 Walnut St., Kansas City, Mo.—To open bids about June 1 on construction 20x85-ft. indoor ice-skating rink; cost \$75,000; McCandlish Engineering Co., Engr., Kansas City.

Ice Plant.—Geo. N. Speden & Co., Marshall, Va.—Small second-hand ice plant.

Inks (Printing Machinery).—See Paper Machinery, etc.—M. Gatell.

Jacks (Lifting).—One Fir Asphalt Plant Co., Ed Wolff, Mgr., Chattanooga, Tenn.—Jacks of 15,000 to 20,000 lbs. capacity, 7 to 8-in. lift, to attach to asphalt plants now under construction. Send catalogues, etc., with prices and discounts.

Kaolin Plant Equipment.—Savannah Kaolin Co., 307 Savannah Bank & Trust Bldg., Savannah, Ga.—Equipment for plant with daily capacity 100 tons washed and 100 tons crude kaolin; to include excavating machinery, boilers, engines, pumps, tanks, pulverizers, washers, dryers, evaporators, dummy engine, light rail and presses. Address W. F. Simmons, Mining Engr., 813 Georgia Life Bldg., Macon, Ga.

Kettles (Canning Factory).—See Canning and Preserving Machinery, etc.—J. E. Hellams.

Locomotive.—See Railway Equipment.—L. F. Hobbs.

Locomotives.—See Kaolin Plant Equipment.—Savannah Kaolin Co.

Log, Loader.—Southern Machinery & Equipment Co., Jas. L. Martin, Secy., 1114 People's National Bank Bldg., Lynchburg, Va.—American model C log loader; advise price, location, condition and full description in first letter, or wire information.

Manufactures (General).—Picot & Co., National Bank Bldgs., Simmonds St., Johannesburg, South Africa.—Interested, with view to agencies on commission, in all American products excepting machinery.

Machine Tools.—W. F. Davis Machine Tool Co., 32 N. Clinton St., Chicago, Ill.—

Grab Buckets, Spud Timbers, Boiler Tubes, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Feb. 4 to furnish grab buckets, drawbar springs, boiler tubes, drill chucks, socket wrenches, steam traps, rattan baskets, window glass, mattress ticking, leather mattress tufts, mattress twine, lye, Venetian red paint, vermilion paint and spud timbers; blanks and general information relating to this circular (No. 1007) may be obtained from this office or offices of assistant purchasing agents, 21 State St., New York; 611 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. office in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Hardware.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on round adjustable dies, schedule 9215, delivery Newport, R. I.; 33 worm-gear jacks, schedule 9216, delivery Philadelphia; 3000 $\frac{1}{2}$ x3 $\frac{1}{2}$ -in. deck bolts and nuts, schedule 9210, and 200 lbs. composition nuts, schedule 9211, delivery Puget Sound.

Heating Plant.—R. O. Davis Sons Co., Inc., R. O. Davis, Prest., Hazard, Ky.—Prices on hot-water heating plant for \$12,000 store and office building.

Heating and Water System.—N. W. Bynum, Corinth, Miss.—Prices on heating and water system for \$1500 dwelling.

Heating Plant.—Leflore County Supervisors, A. R. Bew, Clerk, Greenwood, Miss.—Bids until Feb. 7 for steam boiler for heating Courthouse and for repairing steam boiler now in use for heating Courthouse.

Hoist (Electric).—White Star Coal Co., R. B. Moss, Gen. Mgr., Pineville, Ky.—Electric hoist; for 2500-ft. incline with 58 per cent. maximum grade; to haul both employee and material; prompt delivery f. o. b. Wilhoit, Ky.

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Manufactures (General).—Picot & Co., National Bank Bldgs., Simmonds St., Johannesburg, South Africa.—Interested, with view to agencies on commission, in all American products excepting machinery.

Machine Tools.—W. F. Davis Machine Tool Co., 32 N. Clinton St., Chicago, Ill.—

Engine lathes, turret lathes, screw machines, milling machines, boring and turning mills, planers, shapers, bolt cutters, grinding machines, punches and shears, and all kinds of metal-working machinery.

Marble.—See Building Materials.—King Lumber Co.

Metal Workers.—Roger A. Jennings & Co., Greensboro, N. C.—To correspond with manufacturers having facilities for stamping out brass work.

Metal-working Machinery.—See Machine Tools.—W. F. Davis Machine Tool Co.

Metals.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 3610 nests recoil steel springs, schedule 9203; 1,250,000 lbs. steel castings (slides for guns) and 72,500 lbs. cold-rolled machinery steel, schedule 9202, delivery Washington; 12,000 lbs. pig lead and 7000 lbs. sheet lead, schedule 9210, delivery Mare Island; tin (sheet and tinned plate), schedule 9206, delivery Philadelphia.

Mining Machinery.—See Clayworking Equipment.—Shale Paving Brick & Fireproofing Co.

Mining Machinery.—Deerwood Manganese Mining Corp., R. O. Morden, Secy., care Morden Land & Loan Co., Palace Bldg., Minneapolis, Minn.—May purchase additional equipment for manganese plant.

Motor Trucks.—S. G. Garrett, Virginia Lead & Zinc Corp., University, Va.—Two second-hand 2 to 4-ton broad-tired motor trucks suitable for hauling on dirt roads.

Nitrate of Potash.—See Railway Equipment, etc.—de Brugada, Margeot & Co.

Oils (Lighting).—See Railway Equipment, etc.—de Brugada, Margeot & Co.

Ornamental Iron and Bronze.—See Building Materials.—King Lumber Co.

Paints.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on 1000 gals. paint drier, delivery Norfolk; 15,000 lbs. petroleum, delivery Brooklyn; 100 gals. paint and varnish remover and 1000 lbs. talcum, delivery Philadelphia; all schedule 9205.

Paper Machinery, etc.—M. Gatell, Apartado 558, Barcelona, Spain.—To correspond (with representation) with manufacturers of dry paper, blotting paper, paraffine paper, silk paper for wrapping confectionery, Japanese rice paper, tinfoil, etc.; also machinery for manufacturing colors, anilines, printing inks, etc.

Paving.—Town of Dunedin, Fla., W. Y. Douglass, Clerk.—Bids until Feb. 4 to construct 13,300 sq. yds. paving, 14,000 ft. concrete and granite curb, paving drains and inlets; plans and specifications from Jos. W. Drew, Engr., Dunedin.

Paving.—City of Houston, Tex., Ben Campbell, Mayor.—Bids at office City Secy., until Jan. 22 to pave with 8 in. of gravel and vertical fiber brick Beauchamp St. from White Oak to Highland St. and Rusk Ave., approach to Capitol Ave. bridge; separate bids on each street; specifications and information from E. E. Sands, City Engr.

Paving Blocks.—Port Commissioners, Jacksonville, Fla.—Bids until Jan. 29 to furnish vitrified paving bricks for not less than 20,000 and not more than 35,000 sq. yds.; specifications, etc., on application.

Peanut Machinery.—S. T. Carter, Mgr., Empire Cotton Oil Co., Eainbridge, Ga.—Prices on machinery to manufacture peanut oil, peanut butter, etc.

Pipe.—Norman R. Orcutt, Drainage Engr., Morganfield, Ky.—Prices on cast-iron pipe and valves; 12, 18 and 24-in.

Pipe and Fittings.—See Electrical Cable, etc.—Bureau Supplies and Accounts.

Pipe, Tubes and Fittings.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on wrought pipe, schedule 9206, and valves (safety, relief, etc.), schedule 9217, delivery Brooklyn; 237,000 lbs. lap-welded steel tubes, schedule 9203, delivery Washington; 70 low-pressure gate valves and 48 low-pressure globe and check valves, schedule 9211, delivery Mare Island.

Piping.—Moulton Water-works, H. C. Dunn, Gen. Mgr., Moulton, Ala.—1500 ft. 2 $\frac{1}{2}$ in. cast-iron pipe for branch water main, 70 lbs. pressure; consider wood pipe or 2-in. wrought-iron pipe; also prices on terra-cotta pipe; send list and discount; quote all prices f. o. b. Hillsboro, Ala.

Piping.—Georgetown Gas Light Co., Thos. F. Holden, Engr., 1339 Wisconsin Ave., N. W., Washington, D. C.—Piping for gas mains; 2, 3, 4, 6, 8, 10, 12 and 16-in.

Plumbers' Supplies.—Moulton Water-works, H. C. Dunn, Gen. Mgr., Moulton, Ala.—Prices on plumbers' supplies; quote all prices f. o. b. Hillsboro, Ala.; invites catalogues and traveling men to call.

Pumping Plant.—J. T. Martin, City Secy., Temple, Tex.—Bids until Jan. 31 to install 2 multistate type centrifugal pumping units, direct connected to suitable 220-volt, 60-cycle, 3-phase induction motors, ready for operation in city pumping station; each unit designed to deliver water from city filter basin into mains against direct pressure as per specifications on file with City Secy.

Pumping Plant.—A. R. Cooper, Secy., Pine Bluff Golf and Country Club, Pine Bluff, Ark.—Pumping plant for \$12,000 clubhouse; 100 members.

Punch Presses.—Chas. N. Braun, 1311 E. Lewis St., Fort Wayne, Ind.—Two or three good second-hand punch presses, at least 4-in. strokes; that is, the plunger must operate up and down at least 4 in.; gang metal punch with 6-ft. 6-in. bed, heavy type, for punching $\frac{1}{2}$ -in. angle iron, capable of punching 10 or 12 holes 5-in. diam.

Rails.—C. Penny, 1 S. 20th St., Birmingham, Ala.—Carload 16-lb. rails.

Rails.—See Kaolin Plant Equipment.—Savannah Kaolin Co.

Railway Equipment.—L. F. Hobbs, P. O. Box 483, Norfolk, Va.—24-in. gauge steam locomotive; 3 mi. 21-in. gauge portable track; 12 $\frac{1}{2}$ -yd. steel dump cars, 24-in. gauge; small revolving steam shovel; state age, condition, best cash price and location for inspection in first letter.

Railway Equipment, etc.—de Brugada, Margeot & Co., Port Louis, Mauritius.—Interested, with view to representation, in rails, cars and locomotives of different weights for sugar plantation use; oils for lighting; gasoline for automobiles; nitrate of potash; tubes for generators.

Railway Material.—See Electrical Cable, etc.—Bureau Supplies and Accounts.

Road Construction.—Marion County Comms., Courthouse, Hamilton, Ala.—Bids until Jan. 31 to gravel 10 mi. roads; specifications on file with Mack Pearce, Judge of Probate.

Road Construction.—Dade County Commissioners, Z. T. Merritt, Clerk, Miami, Fla.—Bids until Feb. 11 to construct Tamiami Trail in Special Road and Bridge Dist. No. 2; plans and specifications on file with Clerk of Board.

Road Construction.—Road Commissioners, J. H. S. Morrison, Chrmn., Tazewell, Tenn.—Bids until Feb. 7 to grade or macadamize 29 mi. roads; Tazewell to Clinch's Ferry, on Clinch River, 9 mi.; Springdale up Little Sycamore Creek to Hancock county line, 7 mi.; Half's store on Powells Valley Rd. to Back Valley Rd., 2 mi.; Powells Valley Rd. to Russell's, 1 mi.; Kentucky line up Mingo Hollow to Manring, 4 mi.; Campbell county line up Clear Fork and Valley Creek via Clairfield, 6 mi.

Roofing.—See Building Material.—King Lumber Co.

Saltpetre.—C. O. B. Wilson, Bailey, N. C.—Prices on saltpetre.

School Equipment.—A. W. Graham, Elmo, Tex.—Prices on about \$1000 worth of general school fixtures, blackboards, benches, seats, stoves, etc.

Screens (Wire, Window and Door).—W. F. Sumpter, Box 25, Aberdeen, Miss.—Metal frame galvanized wire screens for residence; must place order within next 2 weeks.

Senting.—See School Equipment.—A. W. Graham.

Sewer Construction.—Town of Dunedin, Fla., W. Y. Douglass, Clerk.—Bids until Feb. 4 to construct 2800 ft. 6 to 12-in. sanitary sewers, Imhoff sedimentation tank and 1400 ft. 15-in. storm drains; plans and specifications from Jos. W. Drew, Engr.

Sheet Metal.—See Building Material.—King Lumber Co.

Shovel (Steam).—See Railway Equipment.—L. F. Hobbs.

Stoves.—See School Equipment.—A. W. Graham.

Steel (Bridge).—City of Helen, Ga., H. D. Smith, Mayor.—Bids on steel for construction of bridge 65 ft. long and 18 ft. wide across Chattahoochee River; city to erect the structure and construct the concrete work on abutments; give prices f. o. b. Helen.

Structural Steel.—See Building Materials.—King Lumber Co.

Tank and Tower.—See Water-works.—City of Wadley, Ga.

Tanners.—West Point Glove Co., A. L. Delmage, Prest. Mgr., West Point, Va.—Addresses of Southern tanners of sheep skins and horse hide for gloves.

Telephone Equipment.—Pauline Farmers' Telephone Co., S. T. D. Lancaster,

Pauline, S. C.—Opening bids on telephone machinery and supplies.

Terra-Cotta.—See Building Materials.—King Lumber Co.

Textile Mill Machinery.—Fields Mfg. Co., Mouth of Wilson, Va.—New or second-hand Bramwell feed.

Ties (Railroad).—T. L. Beckwith, Hotel Pasaje, 96 Prado St., Habana, Cuba.—Prices on pine railroad ties, c. l. f. Cienfuegos, Cuba, terms sight draft; hewn ties, 7x8 in. by 8 ft., delivery as follows: 15,000, March, 1916; 30,000, June; 30,000, December; 30,000, March, 1917; 40,000, June, 1917; subject to buyer's inspection before shipment.

Title.—See Building Materials.—King Lumber Co.

Tubes (Engine).—See Engine.—Stanton Foundry & Machinery Co.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Carrollton.—A. E. Bell, Carrollton, will build 7 mi. railroad, for which survey is reported made by C. M. Ayres of Tuscaloosa, from a point near Carrollton to the Bell Lumber Mill in Pickens county. W. A. Hicks of Fayette, Ala., and Gregory & Meadow of Tuscaloosa have contracts to grade track.

Ark., Cotter.—Cotter, Rush & Mineral Belt Ry. Co., capital \$100,000, is chartered to build line from Cotter to Rush, Ark., about 10 mi. H. H. Gallup, E. B. Griswold and others are directors.

Ark., Glenwood.—A. L. Clark Lumber Co. of Glenwood is reported contemplating construction of about 18 mi. of lumber railroad to connect with the Rock Island at Plainview.

Fla., Chipley.—Birmingham, Columbus & St. Andrews R. R. has obtained court authority to issue \$200,000 of receiver's certificates, and additional line may be built. Extensions recently announced in contemplation are Chipley to Graceville, 12 mi.; Southport to Bunkers Cove, 23 mi. A. D. Campbell is receiver at Chipley.

Ga., Atlanta.—Western & Atlantic R. R. Commission is inviting proposals to build the contemplated extension from Atlanta to the seacoast, about 275 mi. C. M. Candler is Chmn. and Campbell Wallace Secy. at Atlanta. A. J. Twiggs & Son of Augusta, Ga., are reported to have requested detailed information from the Commission preparatory to submitting a bid for the construction.

Ga., Augusta.—Augusta & Western Ry. Co., capital \$100,000, gives notice of petition for charter to build from Augusta to Athens, Ga., about 95 mi. Petitioners: Wm. J. Twiggs, Thos. Barrett, Jr., Geo. W. Wright, Geo. R. Lombard, John W. Dickey and Patrick H. Rice, all of Augusta; Robert W. Lankin of Athens, C. O. Stevens of Crawford, R. O. Barksdale and W. T. Johnson of Washington and L. E. Blanchard of Hartwell, Ga.

Ga., Washington.—Construction of the Washington & Lincolnton R. R. is reported begun by the Morrow Construction Co. from Washington to Metasville, 10 mi. M. Mason is Ch. Engr.

Ky., Barbourville.—Louisville & Nashville R. R. is reported to have begun survey for a detour line from Barbourville to Grays Station, near Corbin, 10 mi., to obtain easier grades. H. C. Williams, Louisville, Ky., is Ch. Engr. of Constr.

La., Gretna.—The Orleans-Kenner Interurban Ry. contemplates building an extension about 1 mi. long. Address Kenner, La.

Md., Baltimore.—The Baltimore & Ohio R. R. has bought additional land at Curtis Bay and will add to its terminal tracks there. F. L. Stuart, Baltimore, is Ch. Engr.

Md., Baltimore.—Pennsylvania R. R. is preparing to lower tracks in and otherwise improve its tunnel between Union and Fulton stations, Baltimore, about 1½ mi. F. Duane is Div. Engr. at Baltimore. A. C. Shand, Philadelphia, is Ch. Engr.

N. C., Bolton.—The Waccamaw Lumber Co. of Bolton is reported contemplating construction of an extension of its lumber railroad from Makatoka to Shallotte, 11 mi.

N. C., Cliffside.—Cliffside R. R. Co. has laid track on its new extension to Midway, between Henrietta and Caroleen.

N. C., Pink Hill.—The Kinston-Carolina R. R., affiliated with the Norfolk Southern System, is reported to have begun survey for an extension from Pink Hill to Chinquapin, N. C., about 18 mi. Wm. Hayes is Gen. Sup't at Kinston, N. C.

Okla., Dewey.—Construction of the San-pulpa & Oil Fields R. R., to be 15 mi. long from Dewey to Drumright, is completed to Shamrock.

Tubes (Generator).—See Railway Equipment, etc.—de Brugada, Margot & Co.

Water-works and Electric Plant.—City of Plains, Kan.—To let contract Jan. 1 for combined water-works and electric plant; H. W. Magruder, Consult. Engr., Liberal, Kan.

Water-works.—City of Wadley, Ga., 8 W. Overstreet, Mayor.—25,000 or 50,000-gal. tank and 30-ft. tower for water-works.

Water-works.—Town of Dunedin, Fla., W. Y. Douglass, Clerk.—Bids until Feb. 4 to construct 10,600 ft. 4 to 8-in. water mains; plans and specifications from Jos. W. Drew, Town Engr.

Woodworking Machinery.—See Foundry Equipment, etc.—Boaz Emergency Mfg. Co.

Wrappers (Bottle).—See Excelsior Bands.—W. A. Duke.

Ala., Birmingham.—Hoover Insurance Agency chartered; capital \$10,000; began business in the First National Bank Bldg. Jan. 5; W. H. Hoover, Prest., Gen. Mgr. and Treas.; J. D. Pope, V.-P., and J. S. Thorn, Secy. and Treas.

Ala., Gadsden.—W. J. Beggs has started a movement to organize a building and loan association in Gadsden, including Alabama City and Attalla.

Ark., Rust.—A new bank is reported being organized by E. C. Parsons and others.

Ark., Marianna.—Lee County Bank has made application to convert into the Lee County National Bank; capital \$50,000.

Ark., Mena.—Kelly-Stratton Co. is organized with \$10,000 capital to succeed the insurance agency of M. A. Stratton & Co., Incptrs.: Judge J. S. Kelly, Prest.; M. A. Stratton, Tres.; W. W. Brown, V.-P., and C. A. Cooper, Secy.

D. C., Washington.—Dupont National Bank has made application to organize; capital \$300,000; organizers, Ezra Gould, E. S. Wolfe, H. H. Westcott, G. A. Garrett and E. C. Copenaver.

Fla., Eau Gallie.—State Bank of Eau Gallie has begun business. Arthur E. Donegan of Kissimmee is Prest.

Fla., Lakeland.—People's State Bank is chartered; capital \$50,000. Incptrs.: W. T. Overstreet, H. M. Cowles, John L. Fouts, J. C. Williams, H. M. Cole, George C. Barton, G. C. Atlanta.—Eisman & Well Investment Co., Incptd., capital \$50,000, with privilege of increasing to \$500,000; incorporators, Sigmund Well, B. Joseph Eisman, I. Liebman and I. Schoen. Business has begun with offices in the Atlanta National Bank Bldg.

Ga., Cadwell.—Citizens' Bank of Cadwell and the Cadwell Banking Co. have consolidated under the name of the latter institution; capital, \$25,000; surplus, \$5000.

Ky., Dawson Springs.—The Commercial Bank of Dawson has filed incorporation articles, capital \$40,000, this being a consolidated company for the Norfolk, Washington & New York Ry. Co. and the Potomac River & Baltimore Ry. Co. Construction is to begin as soon as practicable on line from Norfolk and Newport News to Washington, D. C. Channing M. Ward of Richmond, Prest. of the Norfolk, Washington & New York Ry. Co., Richmond, Va., says that the route is from Newport News via Hampton, Gloucester Point and near Leedstown to Metomkin Point, on the Potomac River, and thence to a connection with the Shepherds branch of the Baltimore & Ohio R. R., which will afford entrance to Washington. A branch from Leedstown to Chesapeake Bay is also proposed. Frank S. Gannon is Prest. 2 Recr. St., New York. F. S. Gannon, Jr., is V.-P. and Secy., and Wm. H. Selbert, Garden City, Long Island, N. Y., is Treas.

W. Va., Huntington.—Contract has not yet been authorized for the extension to connect the Big Coal River line and Coal River extension of Cabin Creek branch of the Chesapeake & Ohio Ry., although it is expected in the region that the work will be done. F. I. Cabell, Richmond, Va., is Ch. Engr.

W. Va., Madison.—Board & Duffield of Charleston, W. Va., are reported to have contract for the Chesapeake & Ohio Ry.'s extension from Madison up Pond Fork of Coal River, 14 or 15 mi. F. I. Cabell, Richmond, Va., is Ch. Engr. of Constr.

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Okla., Dewey.—Construction of the San-pulpa & Oil Fields R. R., to be 15 mi. long from Dewey to Drumright, is completed to Shamrock.

Ala., Birmingham.—May Loan & Realty Co. has filed articles of incorporation; capital \$5000. Ben F. Barbour is Prest.; George A. Neal, Secy.-Treas.

Tex., Memphis.—Grundy Abstract & Title Co. chartered; capital \$10,000; incorporators, D. A. Grundy, J. H. Read and C. R. Webster. Tex., San Antonio.—It is announced that agreement has been attained to merge the Alamo Trust Co., capital \$100,000, and the West Texas Bank & Trust Co., capital \$250,000. W. M. Wolf is Prest. of the former and L. N. Walthall of the latter.

Va., Hopewell.—Southside Land Title Co. is organized with R. J. Camp, Prest.; E. L. Potter, V.-P.; I. M. Warren, Secy. and Treas.

Va., Hopewell.—Hopewell Bank & Trust Co. is being organized with \$50,000 capital.

Va., Marion.—Smyth County Trust Co. of Marion, a new concern, is incorporated; capital \$100,000; will begin business in February; incorporators, W. H. Teas, W. L. Lincoln, B. F. Buchanan, T. E. King and J. A. Groseclose, all of Marion.

W. Va., Charles Town.—Citizens of Charles Town and Ranson have, it is reported, agreed to organize a trust company in Charles Town and have subscribed \$40,000 of the \$100,000 capital desired. The Mayor may be able to give information.

W. Va., Parkersburg.—The Commercial Bank & Trust Co. and the Parkersburg Banking & Trust Co. have consolidated under the name of the former and with officers as follows: Prest., Reese Blizzard; V.-P., Dr. W. J. Davidson, Ex-Gov. A. B. White, T. E. Graham and C. P. Morrison; Secy. and Treas., W. B. Kincheloe; capital \$200,000.

NEW SECURITIES

Ala., Fairhope.—\$800 water and \$500 electric-light 6 per cent. 10-year bonds are voted. A. O. Belgin is Mayor.

Ala., Hartsboro.—\$800 5 per cent. 20-year \$500 denomination water and light bonds are voted; dated Jan. 1, 1916; maturity, Jan. 1, 1936. Date for opening bids not yet decided. Wheeler Williams is Mayor.

Ala., Tuscaloosa.—Election is to be held in Tuscaloosa county to vote on road bonds. Address County Comrns.

Ark., Hartford.—Bonds for water-works and electric-light system are to be issued. Address The Mayor.

Ark., Rector.—\$56,000 water and sewer Rector Dist., Clay county, bonds have been purchased by Bolger, Mosser & Willaman, Chilago.

Fla., Bradenton.—\$250,000 Sarasota Dist., Manatee county, road and bridge bonds are voted. Address County Comrns.

Fla., Clearwater.—Election is to be held March 7 to vote on the following bonds: sanitary sewers and storm sewers, \$12,593.11; paving and street assessment bonds, \$2411.67; library site, \$350; Harbor Oak Improvement contract, about \$16,215.98; pier improvement, about \$1453.67; Jeffords street improvement, about \$350; waterfront park, about \$4021; hospital, about \$3000; fire truck, \$5000; fire station, \$2000; water-works, about \$2000. Address The Mayor.

Fla., De Funiak Springs.—Bids will be received until Feb. 7 by D. N. Trotman, County Supt. of Schools, for \$40,000 6 per cent. 40-year Special Tax School Dist., Walton county, bonds, dated Feb. 7, 1916; denomination \$500 or \$1000, to suit purchaser.

Fla., Sebring.—\$50,000 street bonds are voted. Address The Mayor.

Fla., Starke.—Bids will be received until 7:30 P. M. Feb. 8 for \$42,000 6 per cent. 30-year municipal bonds; dated Jan. 1, 1916; denomination \$1000. Address Town Council, E. S. Matthews, Chmn.; C. A. Futch, Clerk. *Further particulars will be found in the advertising columns.*

Fla., Tallahassee.—Bids will be received 10 A. M. Feb. 21 for \$100,000 5 per cent. 30-year \$1000 denomination Leon county road bonds, dated Dec. 1, 1915. John C. Moore is Chmn. and O. C. Van Brunt Clerk, Board County Comrns. *Further particulars will be found in the advertising columns.*

Fla., Tarpon Springs.—Election is to be held Feb. 15 to vote on \$176,000 municipal improvement bonds. Address Mayor Bradshaw.

Ga., Darien.—Election is to be held in McIntosh county Feb. 1 to vote on \$30,000 funding, \$20,000 road and \$15,000 school 5 per cent. 10-year \$500 denomination bonds. J. G. Legare is County Clerk.

Ga., Fitzgerald.—Election will probably be called to vote on school bonds. Address Board of Education.

Ga., Rome.—Election will be called latter part of February to vote on \$40,000 5 per cent. 20-year auditorium and city hall bonds. Address The Mayor.

Ga., Waco.—\$5000 5 per cent. 1-20-year \$500 denomination Waco School Dist. school bonds, dated Jan. 1, 1916, and maturing Jan.

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Birmingham.—May Loan & Realty Co. has filed articles of incorporation; capital \$5000. Ben F. Barbour is Prest.; George A. Neal, Secy.-Treas.

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Surplus and Profits \$2,175,000.
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Boston Baltimore London

1, 1927 to 1936, inclusive, have been purchased by J. H. Hilsman & Co., Atlanta, at \$5056 and accrued interest, less cost of blank bonds, legal opinion, etc. J. W. Word is Secy. School Board.

Ga., Weston.—Bids will be received until 1 P. M. Feb. 1 by G. G. Lansford, Mayor, for \$3500 6 per cent. water-works bonds; dated Feb. 15, 1916; denomination \$500; maturity Feb. 15, 1921 to 1931, inclusive.

Ky., Burlington.—Election is to be held in Boone county May 8, it is reported, to vote on \$20,000 road bonds. Address County Commsrs.

Ky., Georgetown.—\$100,000 Scott county road bonds are voted. Address County Commissioners.

Ky., Lexington.—Bids will be received until 11 o'clock Jan. 24 for \$350,000 4% per cent. sewer bonds; dated Feb. 1, 1916; denomination \$1000; maturity Feb. 1, 1921 to 1951 inclusive. James C. Rodgers is Mayor and Frank G. Ott Commr. of Finance.

Ky., Covington.—Election is to be called to vote on bonds for water-works system costing \$60,000. Address The Mayor.

Ky., De Ridder.—Election is to be held in Beauregard parish Jan. 22 to vote on \$700,000 road bonds. Address Police Jury.

Ky., Hammond.—An ordinance has been adopted to issue \$20,000 of street bonds. Address City Com.

Ky., Houma.—Dispatch to the Manufacturers Record says that the Bank of Houma and People's Bank & Trust Co. have been awarded jointly the following securities of Terrebonne parish: \$50,000 5 per cent. 40-year bonds Dist. No. 1 at par and \$500 premium; \$100,000 5 per cent. 1-25-year bonds Road Dist. No. 2 at par and \$1500 premium. J. C. Dupont is Prest. Police Jury.

Ky., Vadalia.—Bids will be received until 11 A. M. Feb. 8 by the Directors of Public Schools of Concordia parish for \$20,000 of 5 per cent. serial bonds, denomination \$500. Bids less than par will not be considered. Address D. C. Strickler, Supt. of Schools. Further particulars will be found in the advertising columns.

Ky., Hagerstown.—Bills have been introduced in the Legislature providing for election to vote on \$750,000 sewer and \$75,000 street-improvement bonds. Henry Davis is City Clerk.

Ky., Canton.—Bids will be received until 11 A. M. Feb. 7 by Board of Supervisors, Dist. No. 2, Madison county, for \$80,000 25-year road bonds; interest not to exceed 6 per cent. D. C. McCool is Clerk. Further particulars will be found in the advertising columns.

Ky., Gulfport.—The Board of Supvrs. of Harrison county has adopted a resolution to ask authority of the Legislature to issue \$125,000 of county bonds to purchase and develop grounds for the proposed Mississippi Centennial Exposition at Gulfport in 1917. R. L. Simpson may give information.

Ky., Jackson.—City is considering question of issuing \$120,000 city hospital bonds. Address The Mayor.

Ky., Macon.—\$22,500 Road Dist. No. 5, Noxubee county, bonds have been sold at par, accrued interest and \$686 premium.

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John A. Tyson is Clerk Board of Road Dist. No. 5.

Miss., Pass Christian.—Election to vote on \$45,000 water-works and fire-protection, \$14,000 city hall and jail, \$7000 electric-light and \$30,000 street-improvement 5 per cent. 1-20-year bonds will be held Jan. 31. A. P. Sauer is Mayor and W. A. Terrell City Clerk.

Miss., Yazoo City.—\$45,000 of 5 per cent. serial school bonds, denomination \$500, were sold to the Hibernia National Bank of New Orleans at \$135.10 premium, accrued interest and blank bonds.

Mo., Charleston.—Bids will be received until noon Feb. 1 by Mary H. Lee, County Treas., for \$30,500 6 per cent. bonds Mississippi County Drainage Dist. No. 31. Denomination \$500. Dated Feb. 15, 1916; maturity Feb. 15, 1918 to 1935, inclusive.

Mo., Clayton.—\$125,000 Clayton School Dist. St. Louis county, high-school bonds are reported voted. Address Board of Trustees.

Mo., Ozark.—Election Jan. 19 to vote on \$40,000 5 per cent. 1-15-year bonds 8-Mile Special Road Dist., Christian county; denomination about \$2500. Address H. J. Neyer, Secy. Billings Special Road Dist.

Mo., Springfield.—T. J. Moore, City Clk., wires the Manufacturers Record that the \$400,000 of electric-light-plant bonds were defeated at the election Jan. 11. The vote was 2051 for to 1897 against, but the majority was insufficient by 581 votes. It is contemplated to call a new election.

N. C., Asheville.—\$12,000 of 6 per cent. 30-year high school bonds have been voted by Mt. Carmel, Macedonia and Burnam Heights Dists., Buncombe county. W. H. Hipp is County Supt. of Schools.

N. C., Mount Olive.—Issue of sewer bonds has been purchased by J. B. McCrary Co., Atlanta, Ga. C. S. Smith is Mayor.

N. C., Nashville.—Election is to be held Feb. 15 to vote on \$15,000 water-works, \$20,000 sewerage and \$10,000 electric-light 6 per cent. 50-year bonds. M. W. Linnke is Mayor and Leon T. Vaughan Clerk.

N. C., Taylorsville.—\$150,000 Alexander county road bonds have been declared valid by the County Judge.

Okla., Alva.—Election is to be held Jan. 25 to vote on \$9,000 5 per cent. 20-year school bonds. G. M. Lisk is Clerk Board of Education.

Okla., Durant.—\$25,000 road bonds Township No. 9, Bryan county, are voted. Address County Commsrs.

Okla., Henryetta.—Election to vote on \$30,000 hospital bonds postponed indefinitely.

Okla., Henryetta.—\$100,000 6 per cent. 25-year \$1000 denomination water-works bonds, dated Dec. 1, 1915, and maturing Dec. 1, 1940, have been purchased by United States Bond & Mortgage Co., Dallas, Tex., at \$106,000 and accrued interest.

Okla., Muskogee.—The \$350,000 gaspeline line and \$25,000 sewer 5 per cent. \$1000 denomination bonds soon to be placed on the market are dated Jan. 1, 1916, maturing Jan. 1, 1941. Date for opening bids not yet decided. Franklin Miller is Mayor.

S. C., Greenville.—\$400,000 of an issue of \$50,000 Greenville county 4½ per cent. road bonds have been sold to E. H. Rollins & Sons of Boston at a premium of \$16 and accrued interest.

S. C., Orangeburg.—Election will probably be called to vote on \$12,000 Bowman School Dist., Orangeburg county high-school-building bonds. Address County Commsrs.

S. C., Spartanburg.—Election is to be called to vote on \$5000 Roebuck School Dist., Spartanburg county, bonds. Address County Supt. of Education.

S. C., Spartanburg.—Election is to be held in Mayo School Dist. No. 33, Spartanburg county, Jan. 22, to vote on \$5000 school bonds. H. T. Cash, F. H. Hardin and M. S. Stone Trustees.

Tenn., Centerville.—Election is to be held in Hickman county March 1 to vote on \$200,000 road bonds. Address County Commsrs.

Tenn., Jacksboro.—\$100,000 school bonds have been voted by the Campbell County Court. William Allen is County Judge.

Tenn., Jonesboro.—Reported that election is to be held in Washington county March 5 to vote on road bonds. Address County Commsrs.

Tenn., Knoxville.—Paul Petty, Spartanburg, S. C., was the highest bidder at \$607.50 premium for the \$26,188.36 5 per cent. 5-year street-improvement bonds offered Jan. 1. John E. McMillan is Mayor and Robt. P. Williams Recorder and Treasurer.

Tenn., Lewisburg.—\$50,000 Lewisburg School Dist., Marshall county, bonds are reported

to have recently been voted. Address Board of Education.

Tenn., Lonsdale, P. O. Knoxville.—Another election is to be called to vote on \$30,000 improvement bonds, a previous election having been declared illegal. H. E. Christenberry is Mayor.

Tenn., Paris.—Bids will be received at any time for \$65,000 6 per cent. 15-year bonds to pay off outstanding Henry county warrants. Address J. L. Clendenin, County Judge.

Tenn., Sharon.—Bids will be received until noon Feb. 17 by J. A. Moore, Mayor, and S. A. Smith, Recorder, for \$15,000 water-works and \$10,000 electric-light 6 per cent. 20-year bonds, dated Jan. 1, 1916.

Tenn., Abilene.—School Board has asked City Commission to call an election to vote on \$100,000 school-improvement bonds. Address A. B. Webster, care School Board.

Tenn., Austin.—State Board of Education has purchased school district bonds aggregating \$300,620.

Tenn., Austin.—The Atty.-Gen. has approved the following bonds: \$2300 5 per cent. 10-20s, Van Zandt School Dist. No. 53; \$4250 5 per cent. 10-20s, Queen City (Cass county) independent school dist.; \$5000 5 per cent. 10-40s, Pasadena (Harris county) independent school dist.; \$150,000 5 per cent. 40-year bonds Hill County Road Improvement Dist. No. 2; \$300 bonds Lively Common School Dist. No. 50.

Tenn., Belton.—\$40,000 sewer bonds are voted. Address The Mayor.

Tenn., Edinburg.—Board of Education has sold at par all issues of school bonds. J. S. Bunn is County Supt. of Schools.

Tenn., Columbus.—Election is to be held in February in Colorado county to vote on \$100,000 bonds for Houston-San Antonio highway. Address County Comms.

Tenn., Columbus.—\$200,000 5 per cent. warrants for roads and bridges will probably be issued by Colorado county. Address County Comms.

Tenn., Dallas.—Dispatch to Manufacturers Record says: \$250,000 4% per cent. 14-year city bonds have been purchased at \$9425 premium by Wm. Salomon & Co., New York. Manning B. Shannon is Commr. of Finance and Revenue.

Tenn., Fort Worth.—Election held Jan. 21 to vote on \$500,000 water-works bonds. E. T. Tyra is Mayor.

Tenn., Gatesville.—Bids are being received by T. R. Mears, Mayor, for \$22,500 5 per cent. sewer bonds, dated Jan. 1, 1916.

Tenn., Goldthwaite.—Bids are being received for \$6000 of an issue of \$31,000 5 per cent. 10-40-year \$500 denomination water-works bonds, dated Jan. 1, 1916. Address W. H. Trent or J. C. Darroch. No satisfactory bids were received Jan. 8.

Tenn., Houston.—Bids will be received until noon Feb. 12 for \$937,500 wharf bonds maturing Feb. 16, 1932, to 1956, inclusive, and for \$397,500 40-year drainage sewer bonds maturing Feb. 15, 1926, to 1956, inclusive; interest 5 per cent. Dated Feb. 15, 1916. Ben Campbell is Mayor.

Tenn., Lawn.—\$6000 of 5 per cent. 10-40-year, denomination \$500, school-building bonds are

to be sold. Address D. S. Castle, Abilene, Tex.

Tenn., Lufkin.—Election is to be held Feb. 26 to vote on \$300,000 5 per cent. 20-40-year Angelina county road bonds. Address County Comms. Recent report gave date as Jan. 26.

Tenn., Ross.—\$10,000 school bonds will probably be issued. Address Board of Education.

Tenn., San Antonio.—San Antonio Independent School Dist. will vote Jan. 25 on issue of \$800,000 of 5 per cent. 20-40-year school-building bonds. Walton D. Hood is Pres. and S. G. Bechtel, Secy., School Board.

Tenn., San Benito.—\$1500 6 per cent. 5-10-year street-improvement bonds have been purchased by J. L. Arlitt, Austin, Tex.

Tenn., Tyler.—\$250,000 of 5 per cent. 40-year water-works bonds voted Jan. 4, denomination \$1000 will be offered as soon as issued. John Durst is Chrmn. City Com.

Tenn., Venus.—\$10,000 sewer bonds are voted. Address The Mayor.

Tenn., Waco.—Election is to be held in Ross Community, McLennan county, Feb. 12 to vote on \$10,000 school-building bonds. R. L. Abbott is County Supt. of Schools.

Tenn., Waco.—Election is to be held in Elm Mott Dist., McLennan county, Feb. 5, to vote on \$3000 school bonds. Address Board of School Trustees.

Tenn., Newport News.—Common Council has adopted an ordinance to petition the Legislature for authority to issue \$130,000 of school bonds. Address D. S. Jones, Pres. Common Council.

Tenn., Winchester.—Steps are reported being taken to call an election to vote on \$40,000 electric-light-plant bonds. Address The Mayor.

Tenn., Kingwood.—Election is to be held in Lyon Dist., Preston county, to vote on \$170,000 road bonds. Address County Comms.

Tenn., New Cumberland.—\$50,000 5 per cent. Butler Dist., Hancock county, school bonds recently voted are soon to be issued; denomination \$500; dated May 1, 1916; maturity May 1, 1950. A. A. McEndree is Secy., Holliday's Cove.

FINANCIAL NOTES

Tenn., Evershade has been elected cashier of the South Texas Commercial National Bank of Houston, Tex., succeeding S. M. McAshan, who will continue as vice-president. It is officially stated that Mr. Evershade's promotion comes in recognition of years of continuous and faithful service. He has been with the bank since its organization.

The report of the proceedings of the fourth annual convention of the Investment Bankers' Association of America has been issued in book form. Lewis B. Franklin of New York is president and Fredk. R. Fenton of Chicago secretary, with office at 11 W. Monroe St.

A condensed statement of the condition of the banks at Richmond, Va., has been compiled by W. P. Shelton, assistant cashier of the First National Bank. It is based on the figures reported to the Comptroller of the Currency Dec. 31, and shows total assets \$83,231,648.29; including loans and investments, of \$64,239,448.16. Total deposits are \$58,445,824.98; total capital, \$9,822,150; surplus, profits and reserved \$9,242,973.31.

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INDUSTRIAL NEWS OF INTEREST

Lehigh Cement Moves Savannah Office to Jacksonville.

The Lehigh Portland Cement Company, which for some years has maintained a branch office at Savannah, Ga., has transferred this to 611 Heard Bldg., Jacksonville, Fla.

Land Use Free.

An offer for the free use for one year, with purchase at any time during the year, of 30 acres of virgin agricultural land located on a railroad and shell highway 30 miles from New Orleans, and said to be ideally adapted as a site for canning factory, is the rather unusual offer of the Fidelity Development and Investment Co. of that city.

Trussed Steel Convention.

A sales convention of the Trussed Concrete Steel Co., Youngstown, O., will be held at the company's plant Jan. 25 to 28, inclusive, attended by branch managers from all parts of the country. It is said that elaborate plans have been made for having this one of the greatest affairs of its kind ever held. The manufacturing process will be studied, Hy-Rib with metal lath, steel window sash, pressed steel and many other steel-building specialties being considered.

New Name.

The Kilby Locomotive and Machine Works, Anniston, Ala., announces the change of its name to the Kilby Car & Foundry Co., the change being made in order that the name may better describe the line of manufacture. There is no change of management. The company takes this occasion to thank its friends and customers for their past patronage.

Engineering and Construction Company Incorporated.

Incorporation is announced of the Raleigh Engineering & Construction Co., 1107 Citizens' National Bank Bldg., Raleigh, N. C., for work on railroads, bridges, sewer systems, municipal improvements, building construction, surveys, designs, estimates, water-power developments, etc. The members of the firm are R. W. Kennison, C. V. York, J. S. Thompson and J. B. Brady.

Heating Contracts.

Contract has been let the Enterprise Steam Heating Co., 407 N. Howard St., Baltimore, by the Maryland Steel Co., Sparrows Point, Md., for heating its two new large shops with three blower systems driven by steam engines, and by the City of Baltimore for heating and ventilating system for the new school, No. 101-111, three 100-horsepower boilers being used in supplying the rooms with warmed fresh air forced by electric fans. A. Cookman Leach, Baltimore, is the architect of the latter job.

Clinchfield Cement Establishes Branch Office in Savannah.

In order to more adequately handle the increasing demand for Clinchfield Portland Cement in the South, the Clinchfield Portland Cement Corporation, Kingsport, Tenn., has established an additional branch office at 413-415 American Bank & Trust Bldg., Savannah, Ga.

A branch office has been maintained for several years at Charlotte, N. C., and some

few months ago one was opened at Cincinnati, Ohio. These various branches with the main sales office at the mill at Kingsport, enable the sales department of the company to keep in close touch with its customers and handle their orders with greater facility.

Bond Company Altered.

Announcement is made that the firm of Terry, Briggs & Slayton, municipal bond dealers, 526-30 Ohio Bldg., Toledo, O., has been dissolved by the withdrawal of W. L. Slayton, and that William K. Terry and Clarence D. Briggs will continue the business at the same address under the firm name of Terry, Briggs & Co.

Patent and Trade-mark Office Opened

Norman T. Whitaker, for several years assistant examiner of patents and assistant examiner of trade-marks at Washington, D. C., has left the Government employ and opened an office in Washington, where he is specializing in patent and trade-mark law. Mr. Whitaker received his engineering training at the University of Pennsylvania and his law training in Washington, and besides having a bachelor of law degree has two degrees in master of patent law.

Engineering Office Opened.

A branch office has been opened in the Real Estate Trust Bldg., Philadelphia, Pa., of the Lakewood Engineering Co., Cleveland, O., manufacturer of contractors' equipment, industrial railway supplies and various kinds of industrial machinery, by Lloyd Brown, agent for the company at Baltimore. The company now maintains offices in New York, Philadelphia, Baltimore, Pittsburgh, Chicago and Kansas City.

TRADE LITERATURE

Terra-Cotta in Southern Buildings

The advantageous use of terra cotta in store and office buildings of the South is shown by handsome illustrations of January "Terra Cotta," published by the Atlanta Terra Cotta Co., New York City.

Wire and Wrought Iron Products

"Perfect" wire cloth is featured by The Ludlow-Saylor Wire Co., St. Louis, Mo., in recent catalogues. The cloth is made in various finishes and meshes and, for the convenience of dealers in taking from stock, each kind has a distinctively colored label. Other wire products and wrought-iron fences, furniture, etc., are also described and illustrated.

Pine Block Paving.

A book has been issued by the Southern Pine Association, New Orleans, La., dealing with heavy-service floors, with special reference to the points of durability, safety and practical economy, the purpose of which book is to give the facts upon which is based the claim that the flooring material most fully meeting these qualifications is cross-ted wood blocks. Supplementing a ten-forceful in its presentation of these contentions is a convincing argument in illustrations showing the excellent service wood-block pavements are giving in a wide variety of housed and outdoor applications.

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